TA-F419R/F519R

SERVICE MANUAL

AEP Model

Photo : TA-F519R

SPECIFICATIONS

Amplifier

Continuous RMS power output (both channels driven simultaneously)

Model for Germany

		TA-F519R	TA-F419R
DIN, 1 kHz	4 ohms	105 W + 105 W	80 W + 80 W
	8 ohms	85 W + 85 W	75 W + 75 W
20 Hz – 20 kHz	4 ohms	80 W + 80 W	75 W + 75 W
	8 ohms	75 W + 75 W	65 W + 65 W

Model for Scandinavian countries, Switzerland, Spain and Portugal

		TA-F519R	TA-F419R
DIN, 1 kHz	6 ohms	100 W + 100 W	80 W + 80 W
	8 ohms	80 W + 80 W	70 W + 70 W
20 Hz – 20 kHz	6 ohms	75 W + 75 W	70 W + 70 W
	8 ohms	70 W + 70 W	60 W + 60 W

Model for other countries

		TA-F519R	TA-F419R
DIN, 1 kHz	4 ohms	105 W + 105 W	80 W + 80 W
	8 ohms	85 W + 85 W	75 W + 75 W
20 Hz – 20 kHz	4 ohms	80 W + 80 W	75 W + 75 W
	8 ohms	75 W + 75 W	65 W + 65 W

Input

Input jack	Jack type	Sensitivity	Impedance
PHONO (MM)	Phono	2.0 mV	50 kilohms
PHONO (MC)	Phono	0.17 mV	100 ohms
TUNER, CD, AUX, DAT/TAPE 1 TAPE 2	Phono	150 mV	50 kilohms

PHONO (MM/MC): only for TA-F519R

S/N

	TA-F519R	TA-F419R
PHONO (MM)	76 dB	—
PHONO (MC)	94 dB	94 dB
TUNER, CD, AUX, DAT/TAPE 1 TAPE 2	103 dB	103 dB

Output

Output jack	Jack type	Voltage/impedance
REC OUT	Phono jack	Voltage 150 mV Impedance 1 kohm
HEADPHONES	Stereo phono jack	Accepts low and high impedance headphones

MICROFILM

INTEGRATED STEREO AMPLIFIER

SONY®

Tone controls

	Response	Turnover frequency
BASS	±7 dB (100 Hz)	300 Hz
TREBLE	±6 dB (10 kHz)	5 kHz

Harmonic distortion — Less than 0.008% at 10 W output
Intermodulation (IM) distortion (60 Hz : 7 kHz = 4:1) — Less than 0.008% at 10 W output
Frequency response — PHONO: RIAA equalization curve ±0.5 dB
TUNER, CD, AUX, DAT/TAPE 1, TAPE 2: 7 Hz – 100 kHz $^{+0}_{-3}$ dB
Residual noise — Less than 170 µV (network A)
Damping factor — 70 (8 ohms, 1 kHz)

General

System — Preamplifier: Low-noise, equalizer amplifier
Power amplifier: Pure-complementary SEPP OCL power amplifier with all stages directly coupled
Power requirements — 220 V – 230 V AC, 50/60 Hz
Power consumption — Model for Germany
TA-F 519R: 160 W
TA-F 419R: 160 W
Model for Scandinavian countries, Switzerland, Spain and Portugal
TA-F 519R: 160 W
TA-F 419R: 160 W
Model for other European countries
TA-F 519R: 260 W
TA-F 419R: 260 W
Dimensions — Approx. 430 x 150 x 375 mm (w/h/d) (17 x 5 $^{7}/_{8}$ x 14 $^{3}/_{4}$ inches)
Weight — TA-F519R: Approx. 9.1 kg (20 lb 1 oz)
TA-F419R: Approx. 8.6 kg (18 lb 15 oz)
Supplied accessories — Remote commander RM-S311 (1)
Sony SUM-3 (NS) batteries (2)

The above values are measured at 230 V AC. (Models for European countries)

Design and specifications are subject to change without notice.

Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

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SAFETY-RELATED COMPONENT WARNING!!

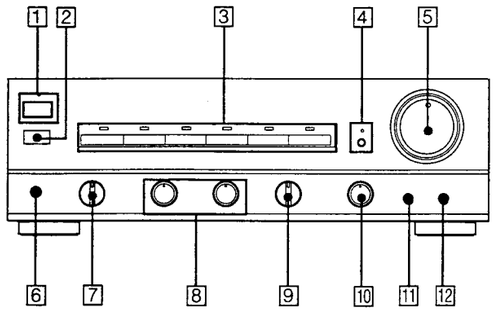
COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1
GENERAL

Identifying the Parts and Controls

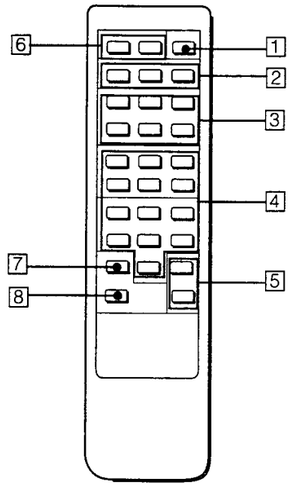
This section describes about each name of this amplifier and remote commander.

This section is extracted from instruction manual.



Front Panel

1. POWER switch and STANDBY indicator
2. Remote control sensor
3. Function selectors and indicators
4. SOURCE DIRECT button and indicator
5. VOLUME control and indicator
   Adjusts the sound level.
   Immediately after turning on the POWER switch , the VOLUME indicator blinks when the built-in muting circuit activates and the unit detects shorting of circuit of the speaker outputs or in case of short-circuit of the inputs of DC components. In such case, turn off the unit and check the connected components and speaker system.
6. HEADPHONES jack
7. SPEAKERS selector
8. TONE (BASS/TREBLE) controls
9. REC OUT SELECTOR
10. BALANCE control
11. SUBSONIC switch (TA-F519R)
12. CARTRIDGE selector (TA-F519R)



RM-S311

Remote Commaner

1. POWER switch
2. TUNER operation buttons
   TUNER: Select the TUNER mode.
   PRESET +/– buttons: Select the preset station.
3. CD operation buttons
   ⏮/⏭: Automatic music sensor.
   D. (Disc) SKIP: Disc skip (for CD player equipped with a multi-disc changer)
   ►: The amplifier enters the CD mode and the CD player starts playback automatically.
   ■: Stop.
   ⏸: Pause.
4. TAPE 2 DECK A/DECK B operation buttons
   ◄◄/►►: Fast winding.
   ■: Stop.
   ◄: The amplifier enters the TAPE 2 mode and the tape deck starts reverse playback automatically.
   ►: The amplifier enters the TAPE 2 mode and the tape deck starts forward playback automatically.
   ●: Recording.
   ⏸: Pause. (Only for DECK B)
5. VOL (Volume) +/– buttons
6. PHONO operation buttons
   START: Pressing START automatically selects the PHONO mode on the amplifier and starts playback of the turntable system.
   STOP: Stops playback of the turntable system.
7. DAT/TAPE 1 button
   Selects the DAT or TAPE 1 mode.
8. AUX button
   Selects the AUX mode.

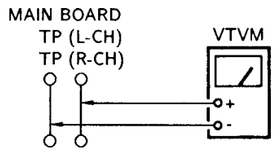
SECTION 2
ELECTRICAL ADJUSTMENTS

Note :

1. DC BIAS adjustments should be made one minute after the POWER switch is turned on (POWER ON).
2. After replacing the power transistors, DC BAIS adjustments should be made.

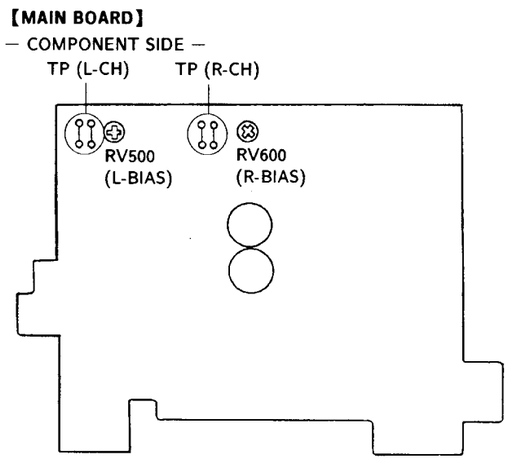
DC Bias Adjustment (with no signal input)

Procedure :



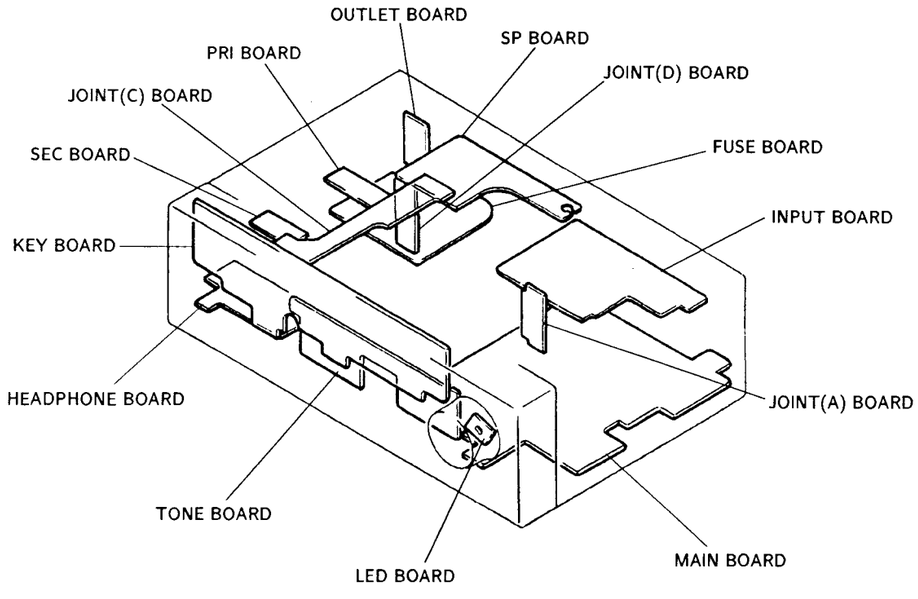
	Adjustment part	Reading on VTVM
L-CH	RV500	7mV
R-CH	RV600	7mV

Adjustment Location :

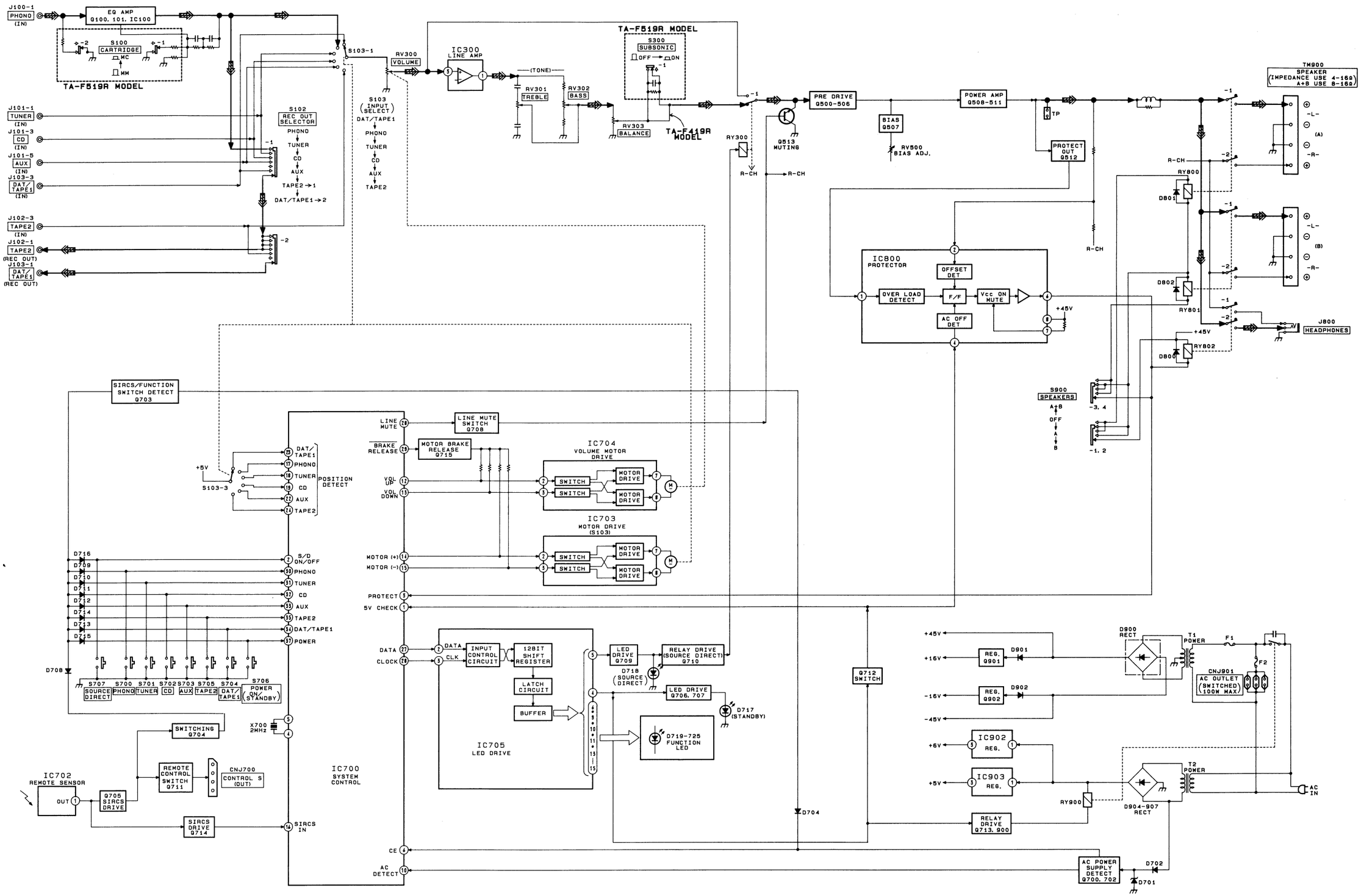


SECTION 3
DIAGRAMS

3-1. CIRCUIT BOARDS LOCATION



3-2. BLOCK DIAGRAM



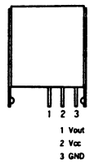
• IC700 System Controller (M50720-358SP)

Pin No.	Pin Name	I /O	Description
1	5V CHECK	I	Power supply (+5V) check.
2	S/D ON/OFF	I	Source direct ON/OFF control input.
3	PROTECT	I	Protection signal input.
4	X OUT	O	Connected oscillator circuit.
5	X IN	I	Connected oscillator circuit.
6	CE	I	Signal input for a return to normal position.
7	$\overline{\text{RESET}}$	I	Reset signal input. ("L" : RESET)
8	VDD	I	+5 Volts power supply.
9	CNTR	I	Ground.
10	AC DET	I	AC power supply detection input.
11	C	I	Connected 0.1μF capacitor.
12	VOL UP	O	Volume control (up) signal output.
13	VOL DOWN	O	Volume control (down) signal output.
14	MOTOR NORM	O	Motor (normal turn) signal output.
15	MOTOR RVS	O	Motor (reverse turn) signal output.
16	SIRCS IN	I	Serial data input (SIRCS).
17	S1	I	Function selector positioning detection input (PHONO).
18	S2	I	Function selector positioning detection input (TUNER).
19	S3	I	Function selector positioning detection input (CD).
20	CNVSS	—	Ground.
21	VSS	—	Ground.
22	S4	I	Function selector positioning detection input (AUX).
23	S5	I	Function selector positioning detection input (TAPE 1).
24	S6	I	Function selector positioning detection input (TAPE 2).
25	S7	I	Connected the resistor 22 kiloohms.
26	CLOCK	O	Shift register for LED (CLK).
27	DATA	O	Shift register for LED (DATA).
28	LINE MUTE	O	Line mute signal output.
29	$\overline{\text{BRAKE RELEASE}}$	O	Motor drive control signal output. ("L" : BRAKE RELEASE)
30	PHONO	I	Function control input for Phono mode.
31	TUNER	I	Function control input for Tuner mode.
32	CD	I	Function control input for CD mode.
33	AUX	I	Function control input for AUX mode.
34	TAPE1	I	Function control input for Tape 1 mode.
35	TAPE2	I	Function control input for Tape 2 mode.
36	—	—	Connected the resistor 22 kiloohms.
37	POWER ON/OFF	I	Power ON/OFF control input.
38	K0	I	Ground.
39	K1	I	Ground.
40	K2	I	Microcomputer operation mode selection input.
41	K3	I	Microcomputer operation mode selection input.
42	MUTE	I	Connected the resistor 22 kiloohms.

• SEMICONDUCTOR LEAD LAYOUTS

BA6208

GP1U52XB



M5218AL
μ PC1237HA

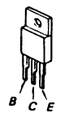
TA7805S
TA7806S

DTA124ES
DTC124ES
2SC2603-EF
2SC3622A-LK

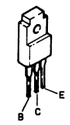
2SA988-PAFAEA
2SA1371-E
2SC2545-E

2SA1175-HFE

2SA1491M-OPY
2SA1492M-OPY
2SD2012



2SA1684-LK

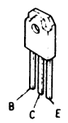


2SC1841-PAFAEA

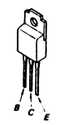
2SC1941-LK

2SC2259-FG

2SC3855M-OPY
2SC3856M-OPY

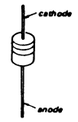


2SC4431-LK

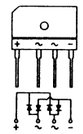


2SK246-GR

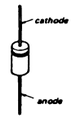
HZS6C1L
HZS7C2L
HZS16-2L
UZ-3.0BS
11ES2



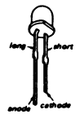
RBV-602-01



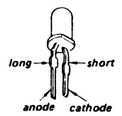
1N4148M
1S1585
10E2



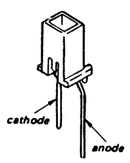
SEL2215R-CD



SEL3210S-CD
SEL3810A-CD



SEL3510C-CD



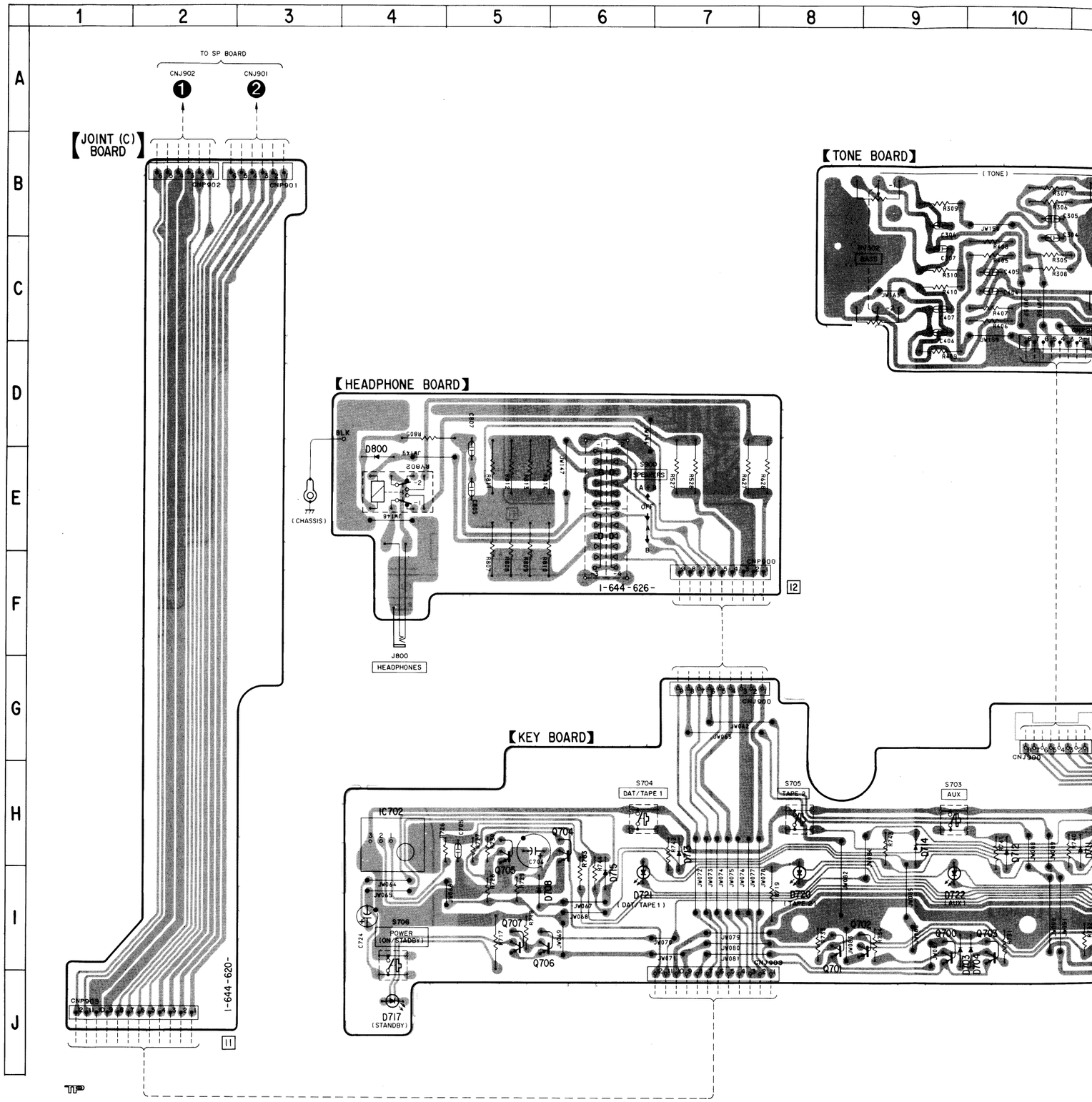
• SEMICONDUCTOR LOCATION

Ref. No.	Location
D703	I – 9
D704	I – 9
D708	I – 5
D709	H – 13
D710	H – 13
D711	H – 11
D712	H – 10
D713	H – 7
D714	H – 9
D715	H – 6
D716	H – 13
D717	J – 4
D718	H – 16
D719	E – 13
D720	H – 8
D721	H – 6
D722	H – 9
D723	H – 11
D724	H – 12
D725	H – 14
D800	E – 4
IC702	H – 4
IC705	I – 12
Q700	I – 9
Q701	I – 8
Q702	I – 8
Q703	I – 10
Q704	H – 6
Q705	H – 5
Q706	I – 5
Q707	I – 5
Q709	I – 13

Note:

- ○— : parts extracted from the component side.
- ▒▒▒ : Pattern on the side which is seen.

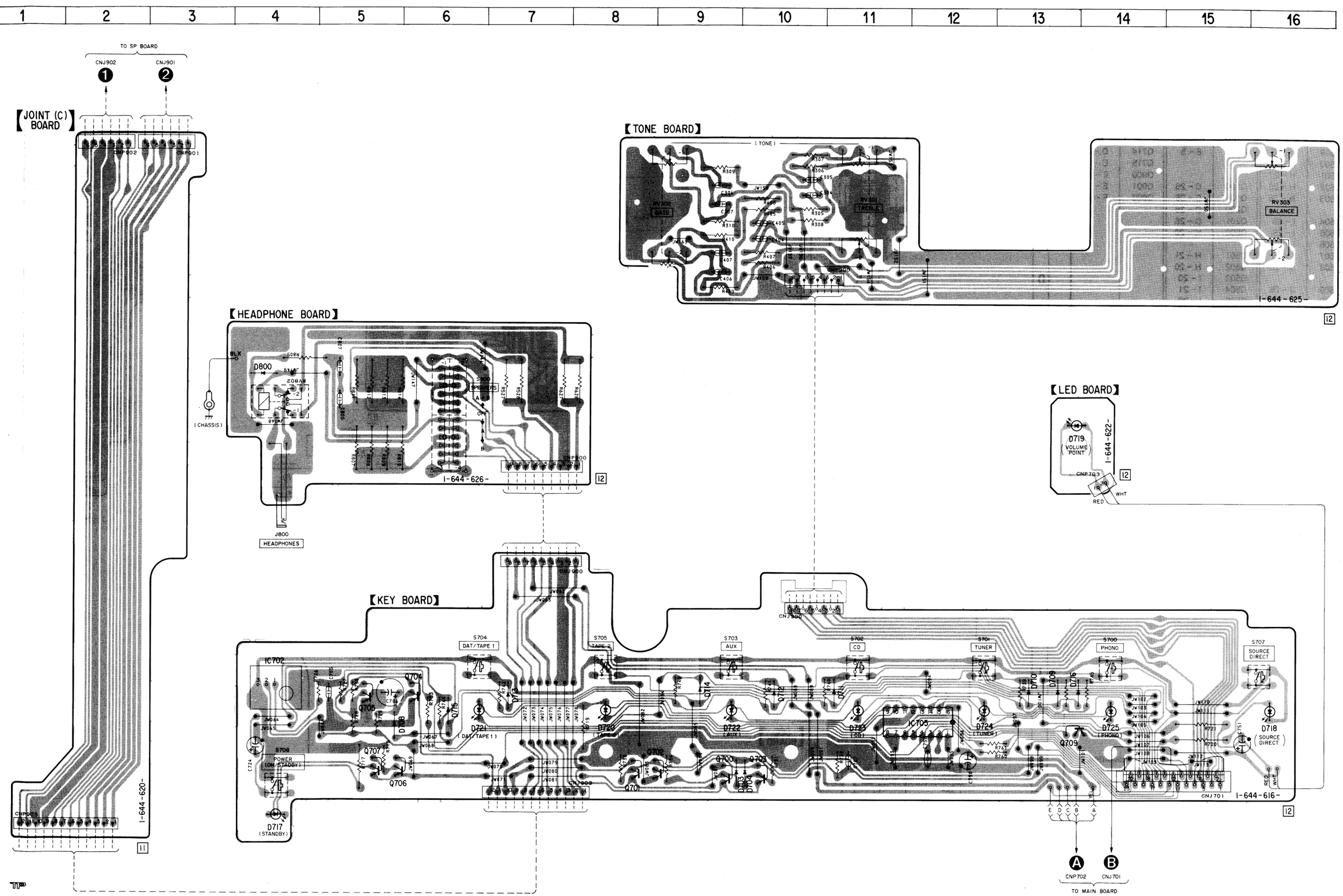
3-3.PRINTED WIRING BOARDS (KEY BOARD SECTION)



NDUCTOR ON

Location
I – 9
I – 9
I – 5
H – 13
H – 13
H – 11
H – 10
H – 7
H – 9
H – 6
H – 13
J – 4
H – 16
E – 13
H – 8
H – 6
H – 9
H – 11
H – 12
H – 14
E – 4
H – 4
I – 12
I – 9
I – 8
I – 8
I – 10
H – 6
H – 5
I – 5
I – 5
I – 13

component side.
ch is seen.



• SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D100	C – 24	D909	E – 28	Q609	I – 26
D500	H – 21	D910	E – 7	Q610	J – 27
D501	H – 19			Q611	J – 25
D502	I – 20			Q612	J – 27
D503	I – 20	IC100	D – 25	Q613	E – 23
		IC300	F – 21		
D504	H – 21	IC700	D – 22	Q708	E – 24
D505	H – 21	IC703	F – 17	Q710	E – 23
D506	H – 21	IC704	F – 17	Q711	D – 5
D507	I – 20			Q712	E – 21
D508	I – 22	IC800	F – 20	Q713	F – 5
		IC902	D – 5		
D509	I – 22	IC903	E – 5	Q714	D – 20
D600	H – 28			Q715	C – 23
D601	H – 27			Q900	E – 6
D602	H – 26	Q100	C – 26	Q901	E – 27
D603	H – 26	Q101	C – 26	Q902	F – 27
		Q200	D – 26		
D604	I – 28	Q201	D – 26		
D605	I – 28	Q500	H – 20		
D606	I – 28				
D607	I – 26	Q501	H – 21		
D608	J – 28	Q502	H – 20		
		Q503	I – 20		
D609	J – 28	Q504	I – 21		
D700	D – 23	Q505	I – 20		
D701	E – 7				
D702	E – 7	Q506	H – 19		
D705	E – 22	Q507	J – 22		
		Q508	I – 21		
D706	E – 22	Q509	I – 20		
D707	F – 22	Q510	J – 23		
D727	D – 6				
D728	E – 24	Q511	J – 21		
D729	E – 24	Q512	I – 22		
		Q513	E – 23		
D801	J – 9	Q600	H – 27		
D802	J – 7	Q601	H – 28		
D900	H – 22				
D901	G – 25	Q602	H – 27		
D902	G – 25	Q603	I – 28		
		Q604	I – 28		
D904	E – 8	Q605	I – 28		
D905	E – 8	Q606	H – 26		
D906	E – 8				
D907	E – 8	Q607	J – 26		
D908	F – 28	Q608	I – 27		

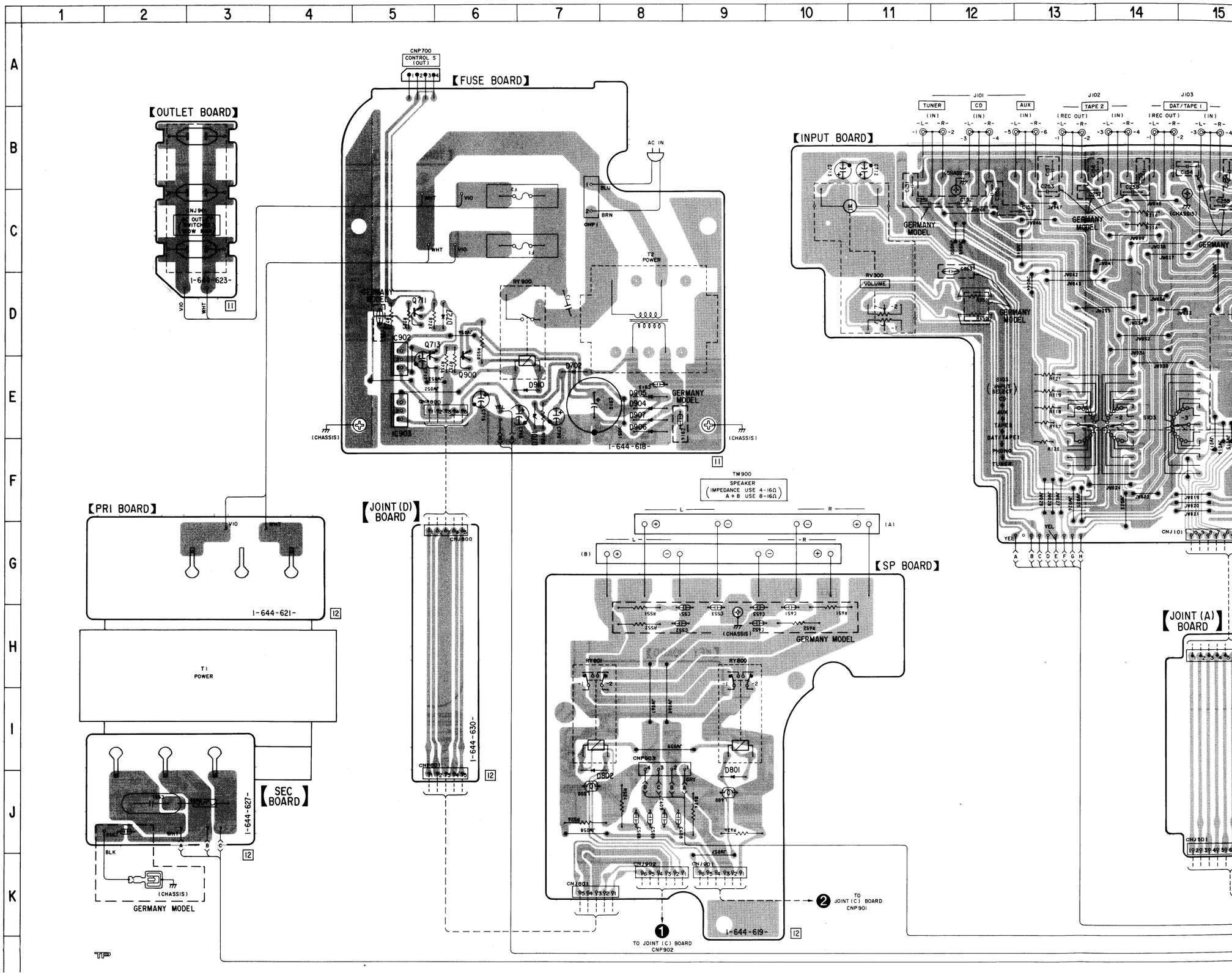
Note :
There are two type of AEP models which are depend on countries.
AEP2 model : Model for Scandinavian countries, Switzerland, Spain and Portugal
AEP1 model : Model for other European countries

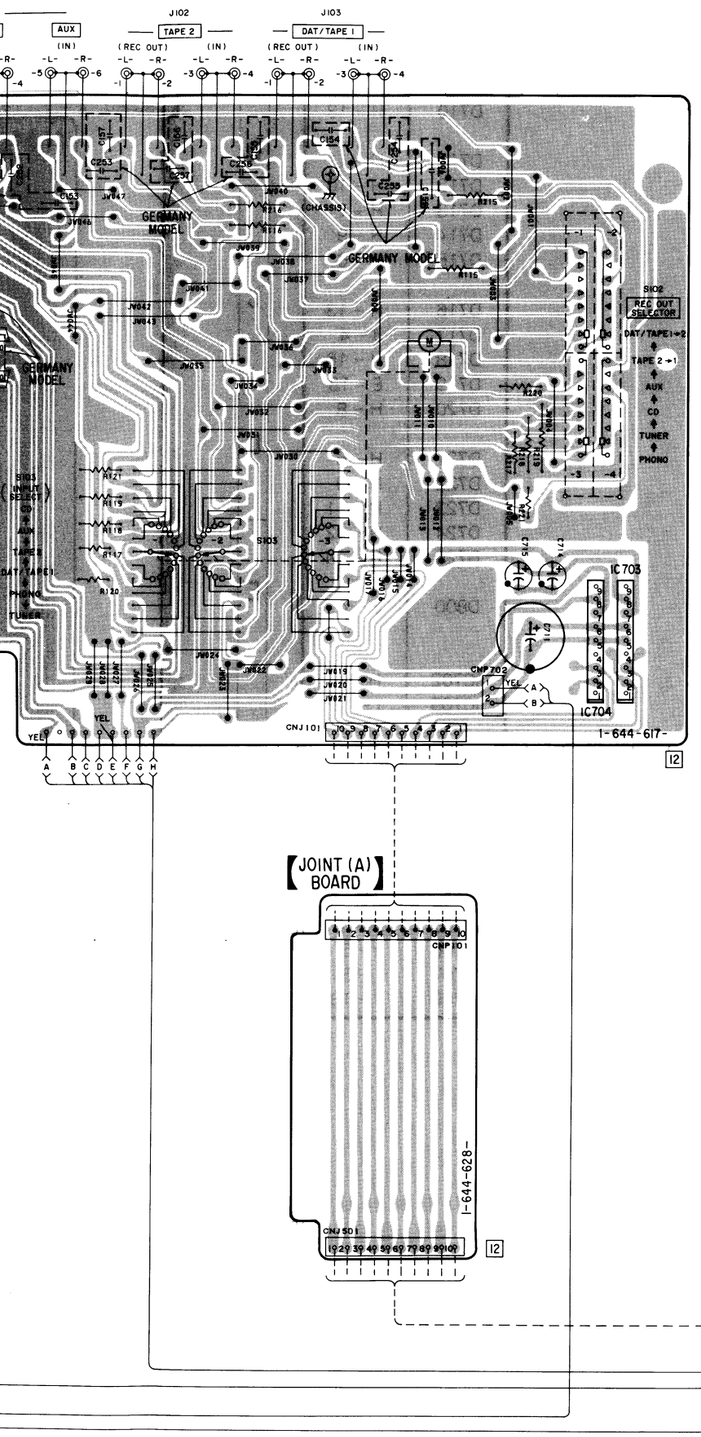
Note:

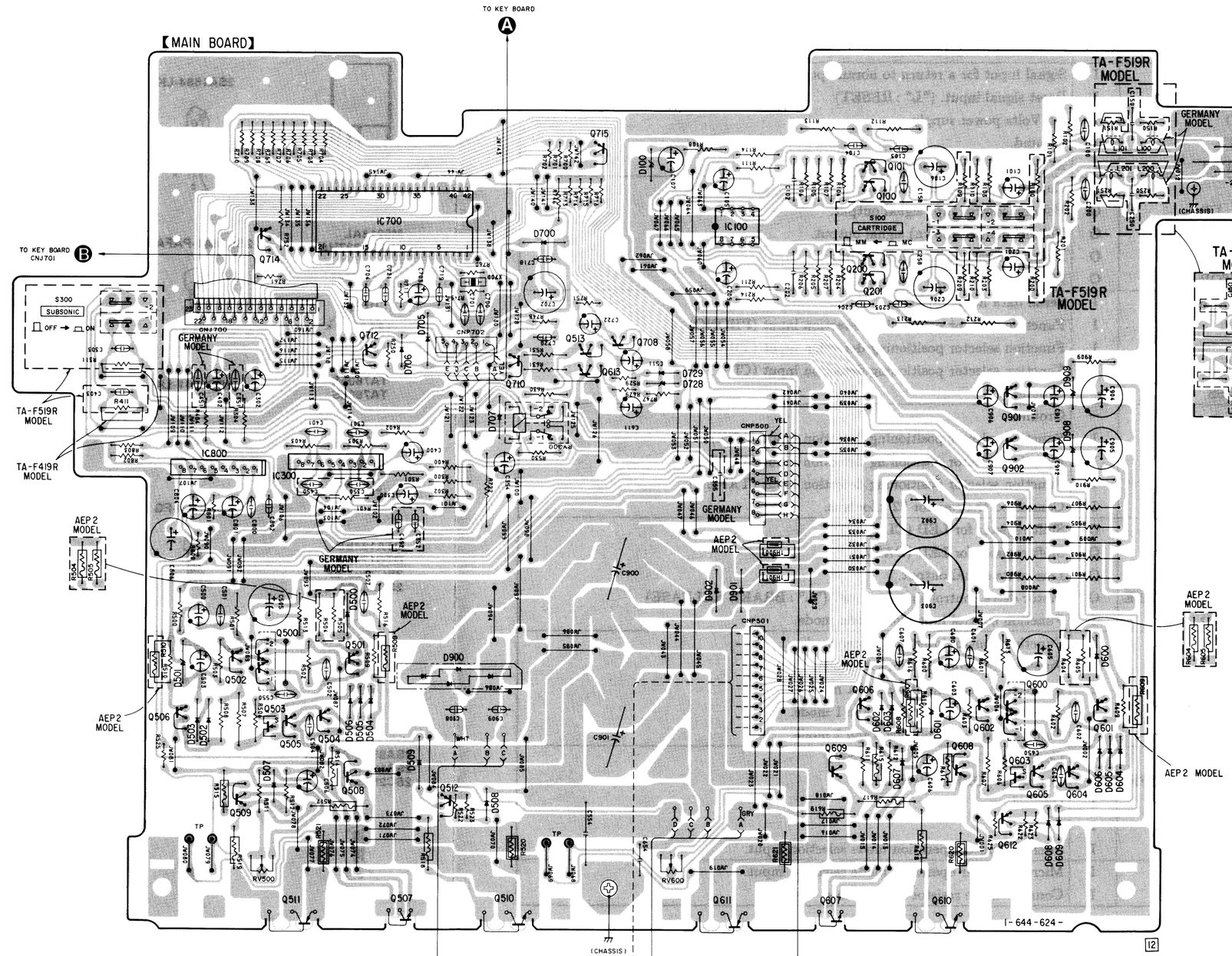
- O— : parts extracted from the component side.
- ▒▒▒ : Pattern on the side which is seen.

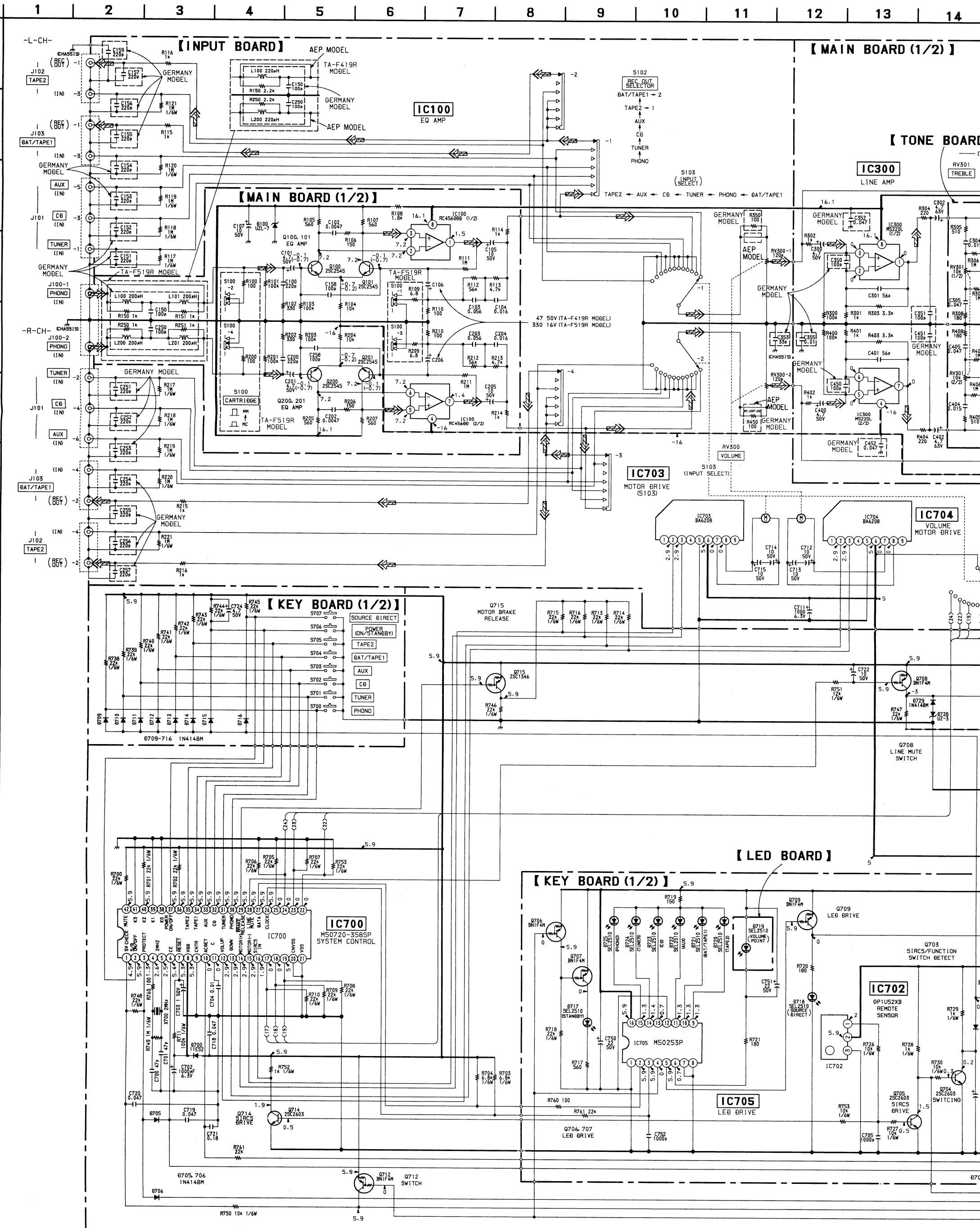
3-4.PRINTED WIRING BOARDS (MAIN BOARD SECTION)

• Refer to Page 8 for Semiconductor Lead Layouts.




AUX
TAPE 2
DAT/TAPE 1
(IN)
(REC OUT)
J102
J103
GERMANY MODEL
(CHASSIS)
SIO2
REC OUT SELECTOR
DAT/TAPE 1→2
TAPE 2→1
AUX
CD
TUNER
PHONO
SIO1
INPUT SELECT
SIO3
IC703
IC704
CNP702
CNJ101
1-644-617-
12
【JOINT (A) BOARD】
CNP101
CNJ501
1-644-628-
12


TO KEY BOARD
A
【MAIN BOARD】
TO KEY BOARD CNJ701
B
S300
SUBSONIC
OFF → ON
TA-F519R MODEL
TA-F419R MODEL
AEP2 MODEL
GERMANY MODEL
IC700
IC800
IC300
IC100
S100
CARTRIDGE
MM ← MC
J100
PHONO
(IN)
CNP702
CNP501
RV500
RV600
(CHASSIS)
1-644-624-
12


【INPUT BOARD】
【MAIN BOARD (1/2)】
【MAIN BOARD (1/2)】
【TONE BOARD】
【KEY BOARD (1/2)】
【KEY BOARD (1/2)】
【LED BOARD】
IC100
EQ AMP
IC300
LINE AMP
IC700
M50720-358SP
SYSTEM CONTROL
IC703
MOTOR DRIVE
(S103)
IC704
VOLUME
MOTOR DRIVE
IC705
LED DRIVE
IC702
GP1U52XB
REMOTE
SENSOR
S102
REC OUT
SELECTOR
S103
(INPUT
SELECT)
TAPE2 ← AUX ← CD ← TUNER ← PHONO ← DAT/TAPE1
S100
CARTRIDGE
RV300
VOLUME
RV301
TREBLE
Q715
MOTOR BRAKE
RELEASE
Q708
LINE MUTE
SWITCH
Q712
SWITCH
Q714
SIRCS
DRIVE
Q703
SIRCS/FUNCTION
SWITCH DETECT
Q704
2SC2603
SWITCING
Q705
2SC2603
SIRCS
DRIVE
Q706, 707
LED DRIVE
Q709
LED DRIVE
GERMANY MODEL
AEP MODEL
TA-F419R MODEL
TA-F519R MODEL
47 50V (TA-F419R MODEL)
330 16V (TA-F519R MODEL)
SOURCE DIRECT
POWER (ON/STANDBY)
TAPE2
DAT/TAPE1
AUX
CD
TUNER
PHONO
TP

【 MAIN BOARD (1/2) 】

【 TONE BOARD 】

【 LED BOARD 】

【 KEY BOARD (1/2) 】

IC300 LINE AMP

IC703 MOTOR DRIVE (S103)

IC704 VOLUME MOTOR DRIVE

IC705 LED DRIVE

IC702 GP1U52XB REMOTE SENSOR

IC800 PROTECTOR

IC903 TA7805 REG.

S102 REC OUT SELECTOR

S103 (INPUT SELECT)

S300 SUBSONIC

RV301 TREBLE

RV302 BASS

RV303 BALANCE

RV300 VOLUME

Q500 PRE DRIVE

Q502, 506 CURRENT REG.

Q513, 613 MUTING

Q600 PRE DRIVE

Q602, 606 CURRENT REG.

Q603-605 THERMAL COMPENSATION

Q607 BIAS

Q503-505 THERMAL COMPENSATION

Q507 BIAS

Q508, 509 DRIVER

Q608, 609 DRIVER

Q610, 611 FINAL AMP

Q708 LINE MUTE SWITCH

Q710 RELAY DRIVE (SOURCE DIRECT)

Q901, 902 REG.

Q703 SIRCS/FUNCTION SWITCH DETECT

Q700-702 AC POWER SUPPLY DETECT

Q706, 707 LED DRIVE

Q709 LED DRIVE

Q711 REMOTE CONTROL SWITCH

Q713 RELAY DRIVE

AEP MODEL

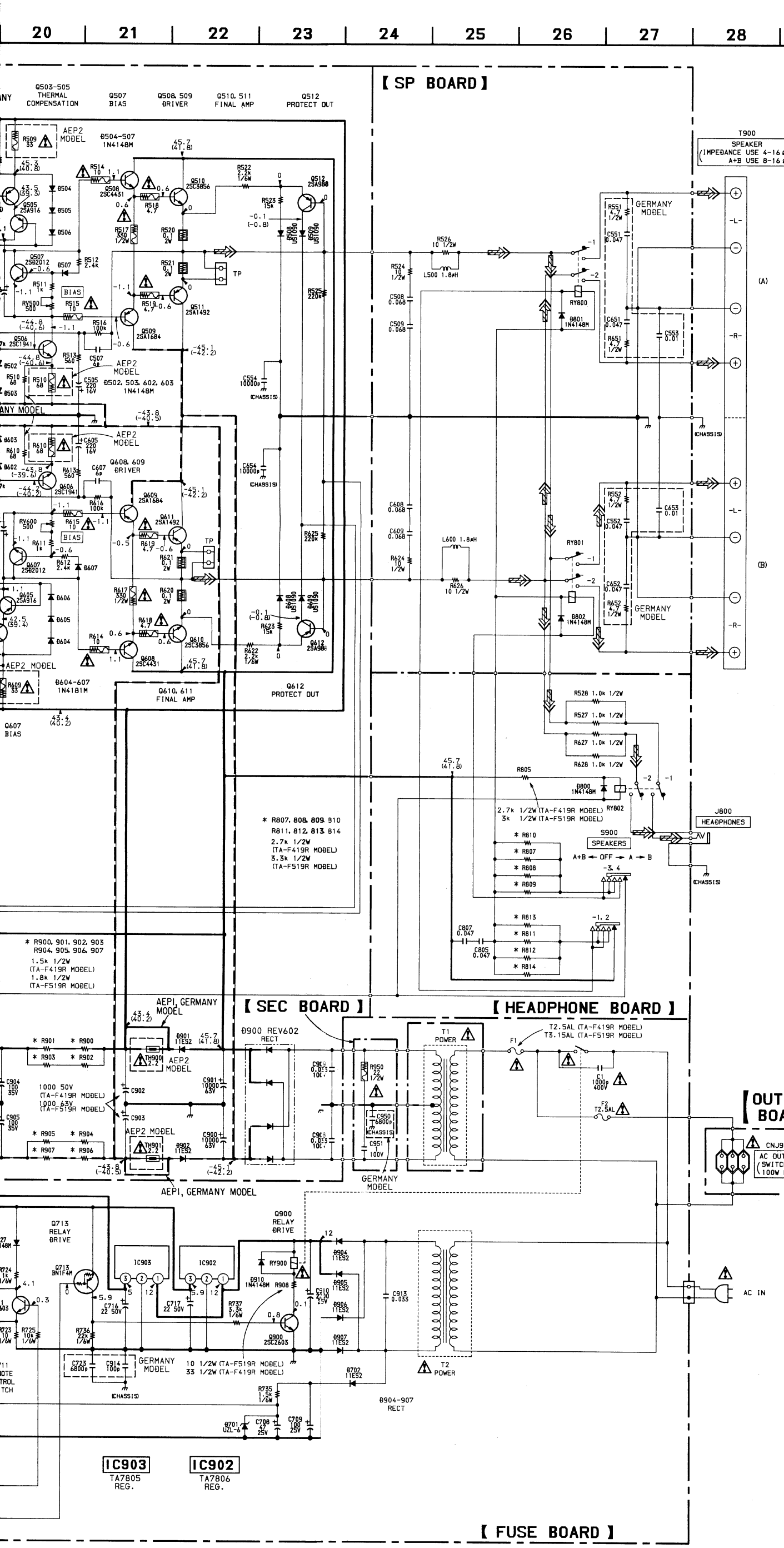
AEP2 MODEL

AEPI, GERMANY MODEL

GERMANY MODEL

TA-F519R MODEL

TA-F419R MODEL



Note :

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- : nonflammable resistor.
- : fusible resistor.

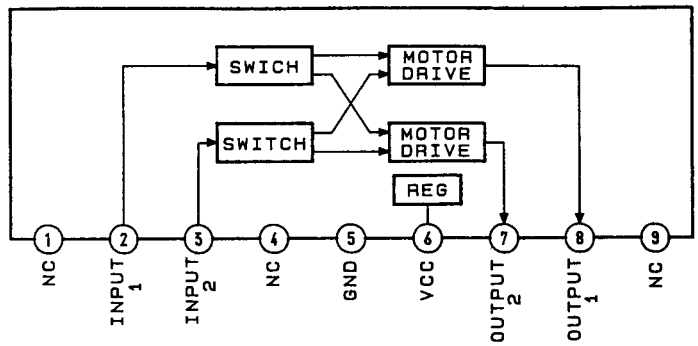
Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- : B+ Line
- : B − Line
- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : CD
  ( ) : F419R only
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  : PHONO

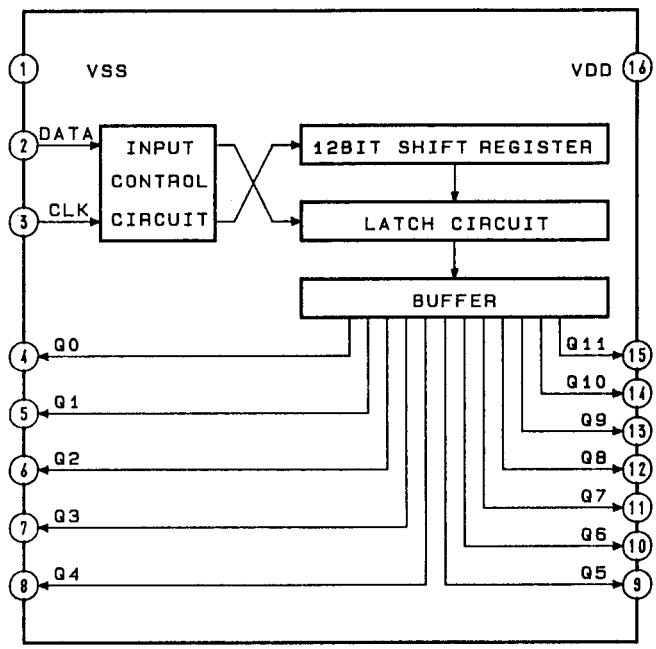
Note :
There are two type of AEP models which are depend on countries.
AEP2 model : Model for Scandinavian countries, Switzerland, Spain and Portugal
AEP1 model : Model for other European countries

3-6. IC BLOCK DIAGRAM

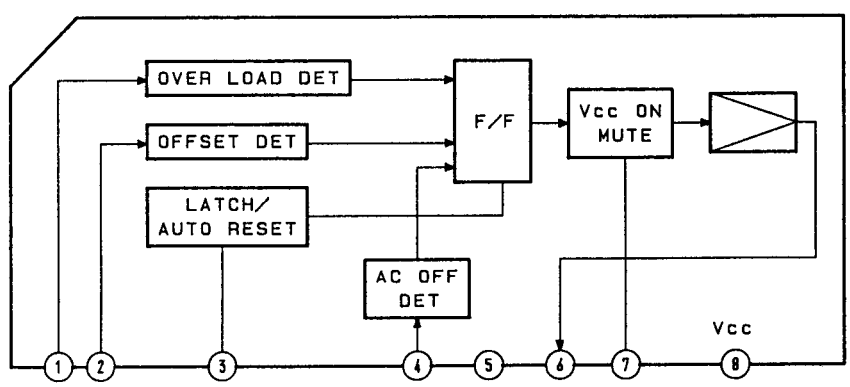
IC703, 704 BA6208



IC705 M50253P



IC800 UPC1237HA



SECTION 4
EXPLODED VIEWS

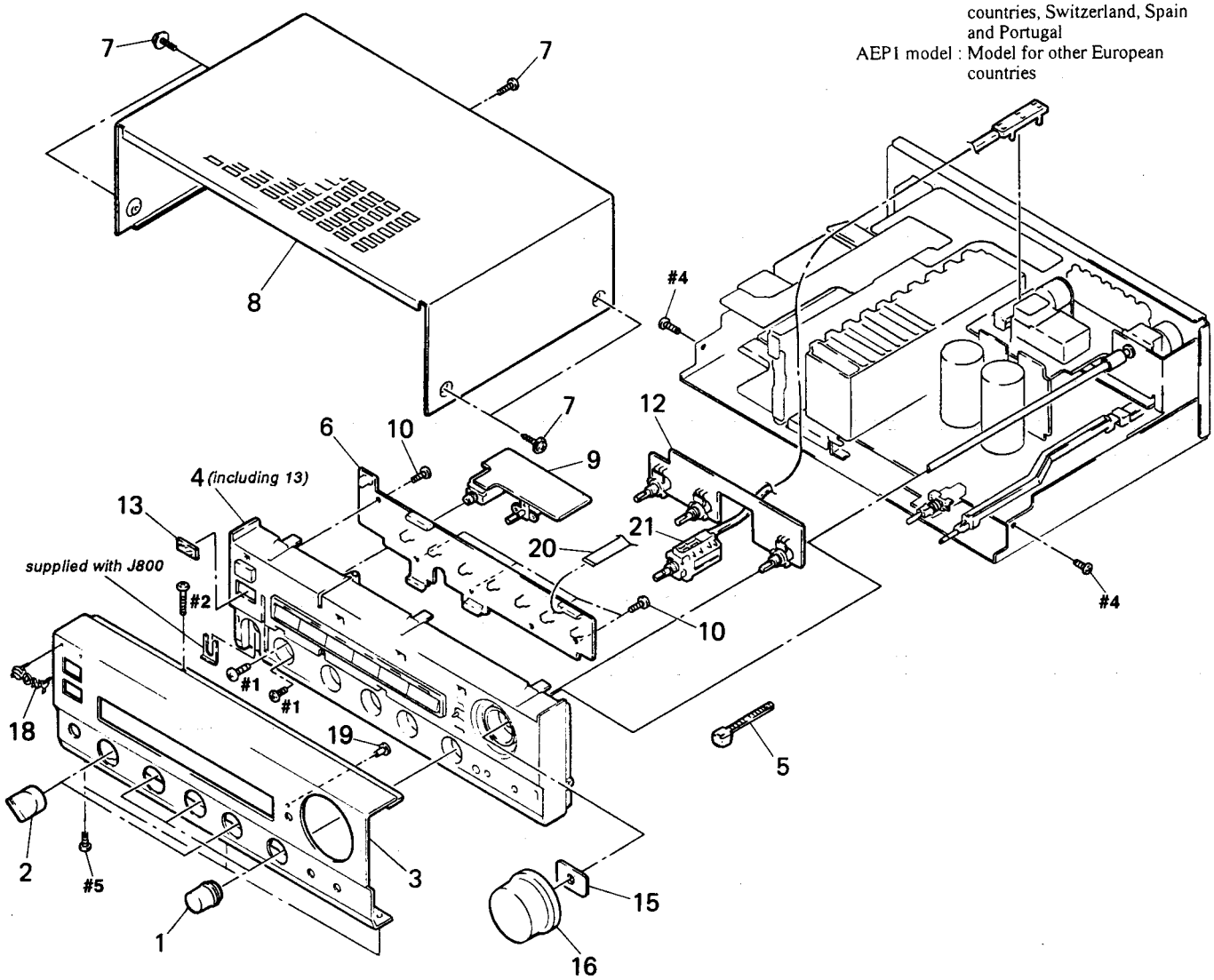
NOTE:
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Color indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE).... (RED)
  ↑ Parts color ↑ Cabinet's color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

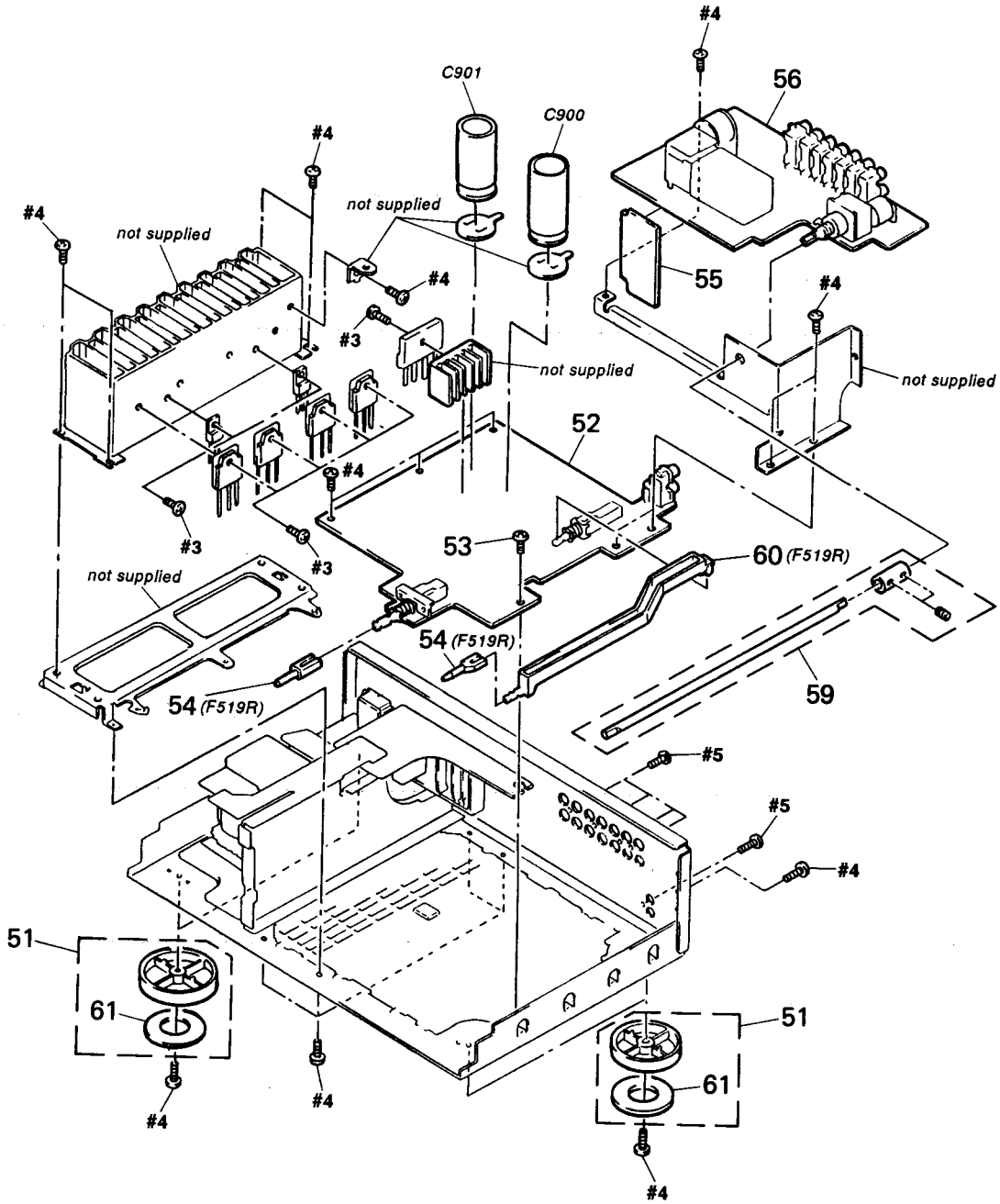
- There are two type of AEP models which are depend on countries.
  AEP2 model : Model for Scandinavian countries, Switzerland, Spain and Portugal
  AEP1 model : Model for other European countries

4-1. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
1	4-949-931-01	KNOB (DIA. 21)	
2	4-951-344-01	KNOB (R21), FLAT	
3	4-951-336-01	PANEL, FRONT (F519R)	
3	4-951-336-11	PANEL, FRONT (F419R)	
4	X-4942-573-1	PANEL (BASE) ASSY	
5	3-655-653-21	BAND (TAITON), BINDING	
* 6	A-4347-648-A	KEY BOARD, COMPLETE (F419R:AEP/F519R:AEP)	
* 6	A-4347-649-A	KEY BOARD, COMPLETE (F419R:Germany/F519R:Germany)	
8	4-931-031-11	CASE	
* 9	1-644-626-11	HEADPHONE BOARD	
10	4-951-620-01	SCREW (2.6X8), +BVTP	
* 12	1-644-625-11	TONE BOARD	
13	4-931-911-01	FILTER	
* 15	1-644-622-11	LED BOARD	
16	X-4942-575-1	KNOB (R53) ASSY	
17	3-704-366-01	SCREW (CASE) (M3X8)	
18	4-908-848-01	EMBLEM, SONY	
19	4-938-518-01	INDICATOR (C)	
20	1-590-499-31	WIRE, FLAT TYPE (23 CORE)	
21	1-692-148-11	SWITCH, ROTARY SLIDE	

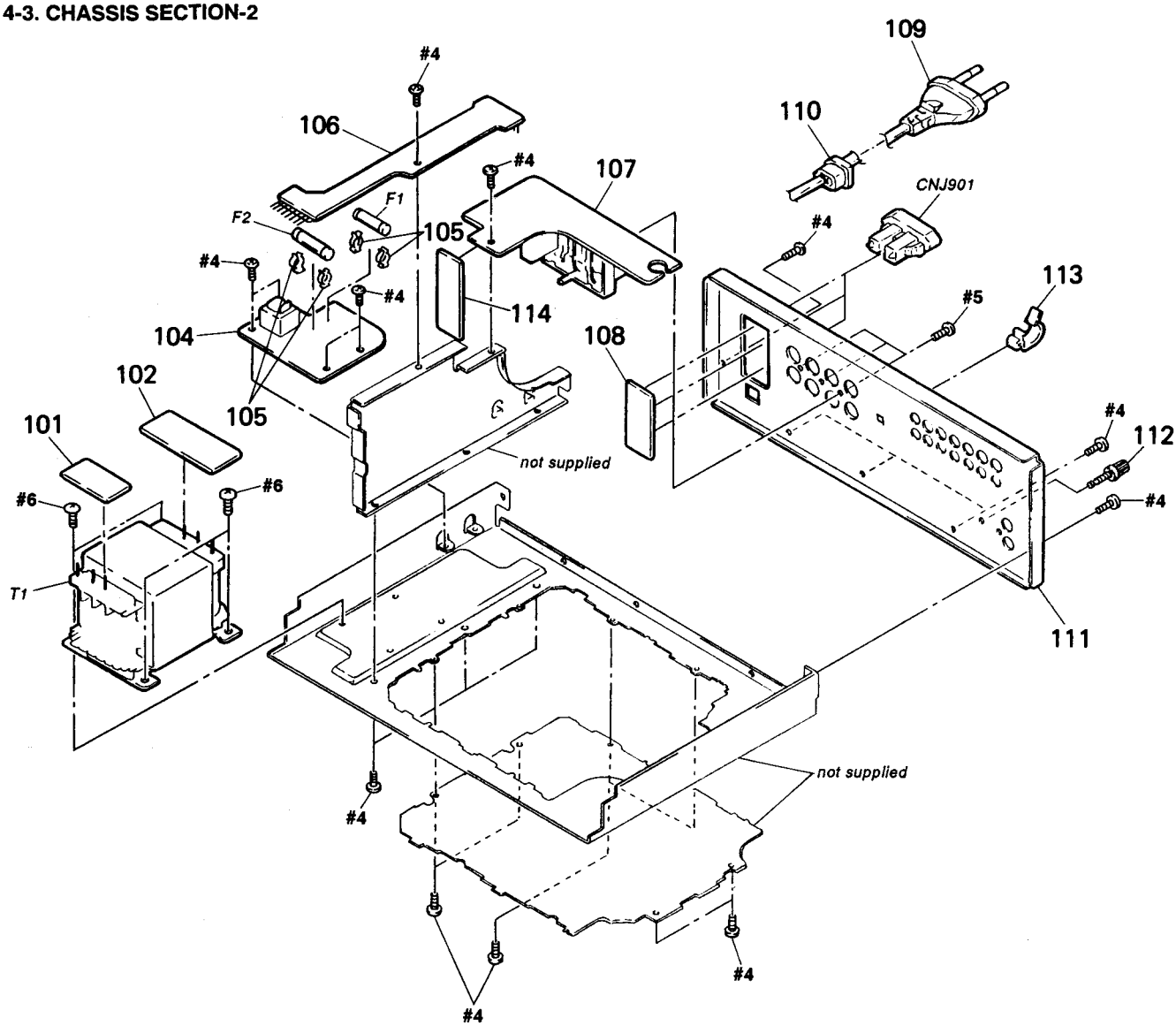
4-2. CHASSIS SECTION-1



Ref. No.	Part No.	Description	Remark
51	X-3304-938-2	FOOT ASSY	
* 52	A-4347-636-A	MAIN BOARD, COMPLETE (F519R:AEP1)	
* 52	A-4347-637-A	MAIN BOARD, COMPLETE (F519R:AEP2)	
* 52	A-4347-638-A	MAIN BOARD, COMPLETE (F519R:Germany)	
* 52	A-4347-678-A	MAIN BOARD, COMPLETE (F419R:AEP1)	
* 52	A-4347-679-A	MAIN BOARD, COMPLETE (F419R:AEP2)	
* 52	A-4347-680-A	MAIN BOARD, COMPLETE (F419R:Germany)	
53	4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6	
54	4-931-641-01	BUTTON (DIA. 4) (F519R)	
* 55	1-644-628-11	JOINT (A) BOARD	

Ref. No.	Part No.	Description	Remark
* 56	A-4347-650-A	INPUT BOARD, COMPLETE (F419R:AEP/F519R:AEP)	
* 56	A-4347-651-A	INPUT BOARD, COMPLETE (F419R:Germany/F519R:Germany)	
59	X-4942-809-1	SHAFT ASSY	
* 60	4-951-345-01	ROD, PUSH SWITCH (F519R)	
61	4-923-836-11	CUSHION	

4-3. CHASSIS SECTION-2



Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
* 101	1-644-627-11	SEC BOARD	
* 102	1-644-621-11	PRI BOARD	
* 104	A-4347-654-A	FUSE BOARD, COMPLETE (F519R:AEP)	
* 104	A-4347-655-A	FUSE BOARD, COMPLETE (F519R:Germany)	
* 104	A-4347-688-A	FUSE BOARD, COMPLETE (F419R:AEP)	
* 104	A-4347-689-A	FUSE BOARD, COMPLETE (F419R:Germany)	
* 105	1-533-213-31	HOLDER, FUSE	
* 106	1-644-620-11	JOINT (C) BOARD	
* 107	1-644-619-11	SP BOARD	
* 108	1-644-623-11	OUTLET BOARD	
⚠109	1-575-651-11	CORD, POWER	
* 110	3-703-244-00	BUSHING (2104), CORD	
* 111	4-951-342-11	PANEL, BACK (F519R:AEP)	
* 111	4-951-342-21	PANEL, BACK (F519R:Germany)	
* 111	4-951-342-41	PANEL, BACK (F419R:AEP)	
* 111	4-951-342-51	PANEL, BACK (F419R:Germany)	

Ref. No.	Part No.	Description	Remark
112	4-947-010-01	SCREW, FEEDER FIXED	
* 113	4-949-235-01	HOOK	
* 114	1-644-630-11	JOINT (D) BOARD	
⚠CNJ901	1-526-794-11	OUTLET, AC	
⚠F1	1-532-237-00	FUSE, TIME LAG (T3.15A) (F519R)	
⚠F1	1-532-286-00	FUSE (T2.5A) (F419R)	
⚠F2	1-532-286-00	FUSE (T2.5A)	
⚠T1	1-450-928-11	TRANSFORMER, POWER (F519R)	
⚠T1	1-450-929-11	TRANSFORMER, POWER (F419R:AEP1, Germany)	
⚠T1	1-450-930-12	TRANSFORMER, POWER (F419R:AEP2)	

SECTION 5
ELECTRICAL PARTS LIST

FUSE

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- G:Germany
- AEP2:Model for Scandinavian countries, Switzerland, Spain and Portugal
- AEP1:Model for ofher European countries
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref.No.	Part No.	Description				Remark
*	A-4347-654-A	FUSE BOARD, COMPLETE (F519R:AEP)				
*	A-4347-655-A	FUSE BOARD, COMPLETE (F519R:G)				
*	A-4347-688-A	FUSE BOARD, COMPLETE (F419R:AEP)				
*	A-4347-689-A	FUSE BOARD, COMPLETE (F419R:G)				
		**********				
*	1-533-213-31	HOLDER, FUSE				
		< CAPACITOR >				
⚠C1	1-161-741-00	CERAMIC	0.001uF	10%	400V	
C708	1-124-126-00	ELECT	47uF	20%	10V	
C709	1-124-478-11	ELECT	100uF	20%	25V	
C716	1-126-233-11	ELECT	22uF	20%	50V	
C717	1-126-233-11	ELECT	22uF	20%	50V	
C723	1-164-094-11	CERAMIC	0.0068uF	10%	25V (F419R:G/F519R:G)	
C910	1-124-563-11	ELECT	2200uF	20%	25V	
C913	1-136-159-00	FILM	0.033uF	5%	50V	
C914	1-164-073-11	CERAMIC	100PF	10%	50V (F419R:G/F519R:G)	
		< CONNECTOR >				
* CNP1	1-564-321-00	PIN, CONNECTOR 2P				
CNP700	1-566-213-11	PIN, CONNECTOR 4P (CONTROL S OUT)				
CNP800	1-691-162-11	PIN, CONNECTOR 5P				
		< DIODE >				
D701	8-719-933-39	DIODE	HZS6C1L			
D702	8-719-200-82	DIODE	11ES2			
D727	8-719-987-63	DIODE	1N4148M			
D904	8-719-200-82	DIODE	11ES2			
D905	8-719-200-82	DIODE	11ES2			
D906	8-719-200-82	DIODE	11ES2			
D907	8-719-200-82	DIODE	11ES2			
D910	8-719-987-63	DIODE	1N4148M			
		< FUSE >				
⚠F1	1-532-237-00	FUSE, TIME LAG (T3.15A) (F519R)				
⚠F1	1-532-286-00	FUSE (T2.5A) (F419R)				
⚠F2	1-532-286-00	FUSE (T2.5A)				
		< IC >				
IC902	8-759-231-54	IC	TA7806S			
IC903	8-759-234-64	IC	TA7805S			
		< TRANSISTOR >				
Q711	8-729-620-05	TRANSISTOR	2SC2603-EF			
Q713	8-729-900-63	TRANSISTOR	DTA124ES			
Q900	8-729-620-05	TRANSISTOR	2SC2603-EF			
		< RESISTOR >				
R723	1-249-393-11	CARBON	10	5%	1/4W	
R724	1-249-417-11	CARBON	1K	5%	1/4W	
R725	1-249-429-11	CARBON	10K	5%	1/4W	
R735	1-249-419-11	CARBON	1.5K	5%	1/4W	
R736	1-249-433-11	CARBON	22K	5%	1/4W	
R737	1-249-423-11	CARBON	3.3K	5%	1/4W	
R908	1-247-733-11	CARBON	33	5%	1/2W(F419R)	
R908	1-247-727-11	CARBON	10	5%	1/2W(F519R)	
		< RELAY >				
⚠RY900	1-515-516-00	RELAY (F419R)				
⚠RY900	1-515-617-11	RELAY (F519R)				
		< TRANSFORMER >				
⚠T2	1-449-071-11	TRANSFORMER, POWER				

HEADPHONE INPUT

Ref. No.	Part No.	Description			Remark
*	1-644-626-11	HEADPHONE BOARD			
		**********			
		< CAPACITOR >			
C805	1-136-161-00	FILM	0.047uF	5%	50V
C807	1-136-161-00	FILM	0.047uF	5%	50V
		< CONNECTOR >			
* CNP900	1-560-943-00	PIN, CONNECTOR 9P			
		< DIODE >			
D800	8-719-987-63	DIODE	1N4148M		
		< JACK >			
J800	1-573-203-11	JACK, LARGE TYPE (HEADPHONES)			
		< RESISTOR >			
R527	1-247-752-11	CARBON	1K	5%	1/2W
R528	1-247-752-11	CARBON	1K	5%	1/2W
R627	1-247-752-11	CARBON	1K	5%	1/2W
R628	1-247-752-11	CARBON	1K	5%	1/2W
R805	1-247-757-11	CARBON	2.7K	5%	1/2W(F419R)
R805	1-247-251-00	CARBON	3K	5%	1/2W(F519R)
R807	1-247-757-11	CARBON	2.7K	5%	1/2W(F419R)
R807	1-247-758-11	CARBON	3.3K	5%	1/2W(F519R)
R808	1-247-757-11	CARBON	2.7K	5%	1/2W(F419R)
R808	1-247-758-11	CARBON	3.3K	5%	1/2W(F519R)
R809	1-247-757-11	CARBON	2.7K	5%	1/2W(F419R)
R809	1-247-758-11	CARBON	3.3K	5%	1/2W(F519R)
R810	1-247-757-11	CARBON	2.7K	5%	1/2W(F419R)
R810	1-247-758-11	CARBON	3.3K	5%	1/2W(F519R)
R811	1-247-757-11	CARBON	2.7K	5%	1/2W(F419R)
R811	1-247-758-11	CARBON	3.3K	5%	1/2W(F519R)
R812	1-247-757-11	CARBON	2.7K	5%	1/2W(F419R)
R812	1-247-758-11	CARBON	3.3K	5%	1/2W(F519R)
R813	1-247-757-11	CARBON	2.7K	5%	1/2W(F419R)
R813	1-247-758-11	CARBON	3.3K	5%	1/2W(F519R)
R814	1-247-757-11	CARBON	2.7K	5%	1/2W(F419R)
R814	1-247-758-11	CARBON	3.3K	5%	1/2W(F519R)
		< RELAY >			
RY802	1-515-793-11	RELAY			
		< SWITCH >			
S900	1-692-147-11	SWITCH, ROTARY SLIDE (SPEAKERS)			

Ref. No.	Part No.	Description			Remark
*	A-4347-650-A	INPUT BOARD, COMPLETE			(F419R:AEP/F519R:AEP)
*	A-4347-651-A	INPUT BOARD, COMPLETE (F419R:G/F519R:G)			
		**********			
		< CAPACITOR >			
C151	1-162-286-31	CERAMIC	220PF	10%	50V(F419R:G/F519R:G)
C152	1-162-286-31	CERAMIC	220PF	10%	50V(F419R:G/F519R:G)
C153	1-162-286-31	CERAMIC	220PF	10%	50V(F419R:G/F519R:G)
C154	1-162-286-31	CERAMIC	220PF	10%	50V(F419R:G/F519R:G)
C155	1-162-286-31	CERAMIC	220PF	10%	50V(F419R:G/F519R:G)
C156	1-162-286-31	CERAMIC	220PF	10%	50V(F419R:G/F519R:G)
C157	1-162-286-31	CERAMIC	220PF	10%	50V(F419R:G/F519R:G)
C159	1-162-286-31	CERAMIC	220PF	10%	50V(F419R:G/F519R:G)
C251	1-162-286-31	CERAMIC	220PF	10%	50V(F419R:G/F519R:G)
C252	1-162-286-31	CERAMIC	220PF	10%	50V(F419R:G/F519R:G)
C253	1-162-286-31	CERAMIC	220PF	10%	50V(F419R:G/F519R:G)
C254	1-162-286-31	CERAMIC	220PF	10%	50V(F419R:G/F519R:G)
C255	1-162-286-31	CERAMIC	220PF	10%	50V(F419R:G/F519R:G)
C256	1-162-286-31	CERAMIC	220PF	10%	50V(F419R:G/F519R:G)
C257	1-162-286-31	CERAMIC	220PF	10%	50V(F419R:G/F519R:G)
C353	1-164-058-11	CERAMIC	33PF	5%	50V(F419R:G/F519R:G)
C711	1-124-471-00	ELECT	1000uF	20%	6.3V
C712	1-124-907-11	ELECT	10uF	20%	50V
C713	1-124-907-11	ELECT	10uF	20%	50V
C714	1-124-907-11	ELECT	10uF	20%	50V
C715	1-124-907-11	ELECT	10uF	20%	50V
		< CONNECTOR >			
* CNJ101	1-691-180-11	CONNECTOR (BOARD TO BOARD) 10P			
* CNP702	1-564-505-11	PLUG, CONNECTOR 2P			
		< IC >			
IC703	8-759-962-08	IC	BA6208		
IC704	8-759-962-08	IC	BA6208		
		< JACK >			
J101	1-566-883-71	JACK, PIN 6P (AUX/CD/TUNER)			
J102	1-566-882-51	JACK, PIN 4P (TAPE2)			
J103	1-566-882-51	JACK, PIN 4P (DAT/TAPE1)			(F419R:AEP/F519R:AEP)
J103	1-566-882-61	JACK, PIN 4P (DAT/TAPE1)			(F419R:G/F519R:G)

INPUT JOINT (A) JOINT (C) JOINT (D) KEY

Ref.No.	Part No.	Description				Remark
		< RESISTOR >				
R115	1-247-713-11	CARBON	1K	5%	1/4W	
R116	1-247-713-11	CARBON	1K	5%	1/4W	
R117	1-259-500-11	CARBON	1M	5%	1/6W	
R118	1-259-500-11	CARBON	1M	5%	1/6W	
R119	1-259-500-11	CARBON	1M	5%	1/6W	
R120	1-259-500-11	CARBON	1M	5%	1/6W	
R121	1-259-500-11	CARBON	1M	5%	1/6W	
R215	1-247-713-11	CARBON	1K	5%	1/4W	
R216	1-247-713-11	CARBON	1K	5%	1/4W	
R217	1-259-500-11	CARBON	1M	5%	1/6W	
R218	1-259-500-11	CARBON	1M	5%	1/6W	
R219	1-259-500-11	CARBON	1M	5%	1/6W	
R220	1-259-500-11	CARBON	1M	5%	1/6W	
R221	1-259-500-11	CARBON	1M	5%	1/6W	
R350	1-247-700-11	CARBON	100	5%	1/4W	(F419R:G/F519R:G)
R450	1-247-700-11	CARBON	100	5%	1/4W	(F419R:G/F519R:G)
		< VARIABLE RESISTOR >				
RV300	1-241-913-11	RES, VAR, CARBON 120K/120K (VOLUME)				
		< SWITCH >				
S102	1-571-115-11	SWITCH, SLIDE (REC OUT SELECTOR)				
S103	1-692-142-11	SWITCH, ROTARY (WITH MOTOR) (INPUT SELECTOR)				
**********						
*	1-644-628-11	JOINT (A) BOARD **********				
		< CONNECTOR >				
* CNJ501	1-691-180-11	CONNECTOR (BOARD TO BOARD) 10P				
CNP101	1-691-167-11	PIN, CONNECTOR 10P				
**********						
*	1-644-620-11	JOINT (C) BOARD **********				
		< CONNECTOR >				
* CNP901	1-580-854-11	PIN, CONNECTOR (PC BOARD) 6P				
* CNP902	1-580-854-11	PIN, CONNECTOR (PC BOARD) 6P				
* CNP903	1-560-443-11	PIN, CONNECTOR 12P				
**********						

Ref.No.	Part No.	Description				Remark
*	1-644-630-11	JOINT (D) BOARD **********				
		< CONNECTOR >				
* CNJ800	1-691-175-11	CONNECTOR (BOARD TO BOARD) 5P				
CNP801	1-691-162-11	PIN, CONNECTOR 5P				
**********						
*	A-4347-648-A	KEY BOARD, COMPLETE (F419R:AEP/F519R:AEP)				
*	A-4347-649-A	KEY BOARD, COMPLETE (F419R:G/F519R:G) **********				
		< CAPACITOR >				
C705	1-164-085-11	CERAMIC	0.001uF	10%	50V	
C706	1-126-176-11	ELECT	220uF	20%	10V	
C707	1-136-161-00	FILM	0.047uF	5%	50V	
C724	1-124-927-11	ELECT	4.7uF	20%	100V	
C750	1-126-233-11	ELECT	22uF	20%	50V	
C751	1-126-233-11	ELECT	22uF	20%	50V	
C752	1-164-085-11	CERAMIC	0.001uF	10%	50V	
		< CONNECTOR >				
* CNJ300	1-565-321-11	SOCKET, CONNECTOR (PC BOARD) 8P				
* CNJ701	1-568-865-11	SOCKET, CONNECTOR 23P				
CNJ900	1-562-088-00	SOCKET, CONNECTOR 9P				
* CNJ903	1-561-652-00	SOCKET, CONNECTOR 12P				
		< DIODE >				
D703	8-719-987-63	DIODE	1N4148M			
D704	8-719-987-63	DIODE	1N4148M			
D708	8-719-987-63	DIODE	1N4148M			
D709	8-719-987-63	DIODE	1N4148M			
D710	8-719-987-63	DIODE	1N4148M			
D711	8-719-987-63	DIODE	1N4148M			
D712	8-719-987-63	DIODE	1N4148M			
D713	8-719-987-63	DIODE	1N4148M			
D714	8-719-987-63	DIODE	1N4148M			
D715	8-719-987-63	DIODE	1N4148M			
D716	8-719-987-63	DIODE	1N4148M			
D717	8-719-313-69	DIODE	SEL3210S-CD			
D718	8-719-313-72	LED	SEL3810A-CD			
D720	8-719-018-46	LED	SEL3510C-CD			
D721	8-719-018-46	LED	SEL3510C-CD			
D722	8-719-018-46	LED	SEL3510C-CD			
D723	8-719-018-46	LED	SEL3510C-CD			
D724	8-719-018-46	LED	SEL3510C-CD			
D725	8-719-018-46	LED	SEL3510C-CD			

KEY LED MAIN

Ref. No.	Part No.	Description	Remark
		< IC >	
IC702	8-749-920-83	IC GP1U52XB	
IC705	8-759-635-31	IC M50253P	
		< TRANSISTOR >	
Q700	8-729-900-63	TRANSISTOR DTA124ES	
Q701	8-729-900-63	TRANSISTOR DTA124ES	
Q702	8-729-900-36	TRANSISTOR DTC124ES	
Q703	8-729-900-63	TRANSISTOR DTA124ES	
Q704	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q705	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q706	8-729-900-63	TRANSISTOR DTA124ES	
Q707	8-729-900-63	TRANSISTOR DTA124ES	
Q709	8-729-900-63	TRANSISTOR DTA124ES	
		< RESISTOR >	
R717	1-247-710-11	CARBON 560 5% 1/4W	
R718	1-249-433-11	CARBON 22K 5% 1/4W	
R719	1-247-702-11	CARBON 150 5% 1/4W	
R720	1-247-703-11	CARBON 180 5% 1/4W	
R721	1-247-703-11	CARBON 180 5% 1/4W	
R726	1-249-429-11	CARBON 10K 5% 1/4W	
R727	1-249-429-11	CARBON 10K 5% 1/4W	
R728	1-249-417-11	CARBON 1K 5% 1/4W	
R729	1-249-417-11	CARBON 1K 5% 1/4W	
R730	1-249-429-11	CARBON 10K 5% 1/4W	
R731	1-249-433-11	CARBON 22K 5% 1/4W	
R732	1-249-438-11	CARBON 56K 5% 1/4W	
R733	1-249-433-11	CARBON 22K 5% 1/4W	
R734	1-249-433-11	CARBON 22K 5% 1/4W	
R738	1-249-433-11	CARBON 22K 5% 1/4W	
R739	1-249-433-11	CARBON 22K 5% 1/4W	
R740	1-249-433-11	CARBON 22K 5% 1/4W	
R741	1-249-433-11	CARBON 22K 5% 1/4W	
R742	1-249-433-11	CARBON 22K 5% 1/4W	
R743	1-249-433-11	CARBON 22K 5% 1/4W	
R744	1-249-433-11	CARBON 22K 5% 1/4W	
R745	1-249-433-11	CARBON 22K 5% 1/4W	
R753	1-249-429-11	CARBON 10K 5% 1/4W	
R760	1-249-405-11	CARBON 100 5% 1/4W	
R761	1-249-405-11	CARBON 100 5% 1/4W	
		< SWITCH >	
S700	1-554-303-21	SWITCH, TACTILE (PHONO)	
S701	1-554-303-21	SWITCH, TACTILE (TUNER)	
S702	1-554-303-21	SWITCH, TACTILE (CD)	
S703	1-554-303-21	SWITCH, TACTILE (AUX)	
S704	1-554-303-21	SWITCH, TACTILE (DAT/TAPE 1)	
S705	1-554-303-21	SWITCH, TACTILE (TAPE 2)	
S706	1-554-303-21	SWITCH, TACTILE (POWER)	
S707	1-554-303-21	SWITCH, TACTILE (SOURCE DIRECT)	

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*	1-644-622-11	LED BOARD	
		*********	
		< CONNECTOR >	
* CNP703	1-564-505-11	PLUG, CONNECTOR 2P	
		< DIODE >	
D719	8-719-028-38	DIODE SEL2215R-CD-TP	

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*	A-4347-636-A	MAIN BOARD, COMPLETE (F519R:AEP1)	
*	A-4347-637-A	MAIN BOARD, COMPLETE (F519R:AEP2)	
*	A-4347-638-A	MAIN BOARD, COMPLETE (F519R:G)	
*	A-4347-678-A	MAIN BOARD, COMPLETE (F419R:AEP1)	
*	A-4347-679-A	MAIN BOARD, COMPLETE (F419R:AEP2)	
*	A-4347-680-A	MAIN BOARD, COMPLETE (F419R:G)	
		**********	
		< CAPACITOR >	
C100	1-164-077-11	CERAMIC 220PF 10% 50V	
C101	1-123-369-00	ELECT 4.7uF 20% 50V	
C102	1-161-377-00	CERAMIC 0.0047uF 30% 16V	
C103	1-136-162-00	FILM 0.056uF 5% 50V	
C104	1-137-471-11	FILM 0.016uF 5% 50V	
C105	1-126-059-11	ELECT 10uF 20% 50V	
C106	1-124-910-11	ELECT 47uF 20% 50V(F419R)	
C106	1-126-541-11	ELECT 330uF 20% 16V(F519R)	
C107	1-126-059-11	ELECT 10uF 20% 50V	
C150	1-162-282-31	CERAMIC 100PF 10% 50V (F419R:G/F519R:G)	
C158	1-164-073-11	CERAMIC 100PF 10% 50V	
C200	1-164-077-11	CERAMIC 220PF 10% 50V	
C201	1-123-369-00	ELECT 4.7uF 20% 50V	
C202	1-161-377-00	CERAMIC 0.0047uF 30% 16V	
C203	1-136-162-00	FILM 0.056uF 5% 50V	
C204	1-137-471-11	FILM 0.016uF 5% 50V	
C205	1-126-059-11	ELECT 10uF 20% 50V	
C206	1-124-910-11	ELECT 47uF 20% 50V(F419R)	
C206	1-126-541-11	ELECT 330uF 20% 16V(F519R)	

MAIN

Ref. No.	Part No.	Description				Remark
C250	1-162-282-31	CERAMIC	100PF	10%	50V	
						(F419R:G/F519R:G)
C258	1-164-073-11	CERAMIC	100PF	10%	50V	
C300	1-123-369-00	ELECT	4.7uF	20%	50V	
C301	1-164-064-11	CERAMIC	56PF	5%	50V	
C302	1-123-369-00	ELECT	4.7uF	20%	50V	
C303	1-136-166-00	FILM	0.12uF	5%	50V	(F519R)
C351	1-164-073-11	CERAMIC	100PF	10%	50V	
						(F419R:G/F519R:G)
C352	1-136-161-00	FILM	0.047uF	5%	50V	
						(F419R:G/F519R:G)
C354	1-124-791-11	ELECT	1.0uF	20%	100V	
C355	1-162-306-11	CERAMIC	0.01uF	20%	16V	
						(F419R:G/F519R:G)
C400	1-123-369-00	ELECT	4.7uF	20%	50V	
C401	1-164-064-11	CERAMIC	56PF	5%	50V	
C402	1-123-369-00	ELECT	4.7uF	20%	50V	
C403	1-136-166-00	FILM	0.12uF	5%	50V	(F519R)
C451	1-164-073-11	CERAMIC	100PF	10%	50V	
						(F419R:G/F519R:G)
C452	1-136-161-00	FILM	0.047uF	5%	50V	
						(F419R:G/F519R:G)
C500	1-123-369-00	ELECT	4.7uF	20%	50V	
C501	1-164-073-11	CERAMIC	100PF	10%	50V	
C502	1-164-083-11	CERAMIC	680PF	10%	50V	
C503	1-124-910-11	ELECT	47uF	20%	50V	
C504	1-162-550-11	CERAMIC	39PF	5%	500V	
C505	1-124-120-11	ELECT	220uF	20%	25V	
C506	1-123-306-00	ELECT	47uF	20%	10V	
C507	1-102-943-00	CERAMIC	6.0PF	+-0.5PF	50V	
C511	1-126-049-11	ELECT	22uF	20%	50V	
C550	1-164-073-11	CERAMIC	100PF	10%	50V	
C554	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C600	1-123-369-00	ELECT	4.7uF	20%	50V	
C601	1-164-073-11	CERAMIC	100PF	10%	50V	
C602	1-164-083-11	CERAMIC	680PF	10%	50V	
C603	1-124-910-11	ELECT	47uF	20%	50V	
C604	1-162-550-11	CERAMIC	39PF	5%	500V	
C605	1-124-120-11	ELECT	220uF	20%	25V	
C606	1-123-306-00	ELECT	47uF	20%	10V	
C607	1-102-943-00	CERAMIC	6.0PF	+-0.5PF	50V	
C611	1-126-049-11	ELECT	22uF	20%	50V	
C650	1-164-073-11	CERAMIC	100PF	10%	50V	
C654	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C700	1-164-062-11	CERAMIC	47PF	5%	50V	
C701	1-164-062-11	CERAMIC	47PF	5%	50V	
C702	1-124-471-00	ELECT	1000uF	20%	6.3V	

Ref. No.	Part No.	Description				Remark
C703	1-124-903-11	ELECT	1uF	20%	50V	
C704	1-136-153-00	FILM	0.01uF	5%	50V	
C718	1-136-161-00	FILM	0.047uF	5%	50V	
C719	1-136-161-00	FILM	0.047uF	5%	50V	
C720	1-136-161-00	FILM	0.047uF	5%	50V	
C721	1-136-168-00	FILM	0.18uF	5%	50V	
C722	1-124-907-11	ELECT	10uF	20%	50V	
C800	1-164-085-11	CERAMIC	0.001uF	10%	50V	
C801	1-124-443-00	ELECT	100uF	20%	10V	
C802	1-136-153-00	FILM	0.01uF	5%	50V	
C804	1-124-482-11	ELECT	33uF	20%	35V	(F419R)
C804	1-124-443-00	ELECT	100uF	20%	10V	(F519R)
C806	1-124-472-11	ELECT	470uF	20%	10V	
C900	1-125-748-11	ELECT	10000uF	20%	50V	(F419R)
C900	1-125-747-11	ELECT	10000uF	20%	63V	(F519R)
C901	1-125-748-11	ELECT	10000uF	20%	50V	(F419R)
C901	1-125-747-11	ELECT	10000uF	20%	63V	(F519R)
C902	1-126-170-11	ELECT	1000uF	20%	50V	(F419R)
C902	1-124-922-11	ELECT	1000uF	20%	63V	(F519R)
C903	1-126-170-11	ELECT	1000uF	20%	50V	(F419R)
C903	1-124-922-11	ELECT	1000uF	20%	63V	(F519R)
C904	1-124-122-11	ELECT	100uF	20%	50V	
C905	1-124-122-11	ELECT	100uF	20%	50V	
C906	1-124-122-11	ELECT	100uF	20%	50V	
C907	1-124-122-11	ELECT	100uF	20%	50V	
C908	1-106-379-12	MYLAR	0.033uF	5%	200V	
C909	1-106-379-12	MYLAR	0.033uF	5%	200V	
C911	1-124-910-11	ELECT	47uF	20%	50V	
C912	1-124-910-11	ELECT	47uF	20%	50V	

< CONNECTOR >

* CNJ700	1-568-839-11	SOCKET, CONNECTOR 23P	
* CNP500	1-564-511-11	PLUG, CONNECTOR 8P	
CNP501	1-691-167-11	PIN, CONNECTOR 10P	
* CNP702	1-564-508-11	PLUG, CONNECTOR 5P	

< DIODE >

D100	8-719-933-50	DIODE	HZS7C2L
D500	8-719-987-63	DIODE	1N4148M
D501	8-719-933-39	DIODE	HZS6C1L
D502	8-719-987-63	DIODE	1N4148M
D503	8-719-987-63	DIODE	1N4148M
D504	8-719-987-63	DIODE	1N4148M
D505	8-719-987-63	DIODE	1N4148M
D506	8-719-987-63	DIODE	1N4148M

MAIN

Ref. No.	Part No.	Description		Remark
D507	8-719-987-63	DIODE	1N4148M	
D508	8-719-815-85	DIODE	1S1585	
D509	8-719-815-85	DIODE	1S1585	
D600	8-719-987-63	DIODE	1N4148M	
D601	8-719-933-39	DIODE	HZS6C1L	
D602	8-719-987-63	DIODE	1N4148M	
D603	8-719-987-63	DIODE	1N4148M	
D604	8-719-987-63	DIODE	1N4148M	
D605	8-719-987-63	DIODE	1N4148M	
D606	8-719-987-63	DIODE	1N4148M	
D607	8-719-987-63	DIODE	1N4148M	
D608	8-719-815-85	DIODE	1S1585	
D609	8-719-815-85	DIODE	1S1585	
D700	8-719-200-82	DIODE	11ES2	
D705	8-719-987-63	DIODE	1N4148M	
D706	8-719-987-63	DIODE	1N4148M	
D707	8-719-987-63	DIODE	1N4148M	
D728	8-719-010-15	DIODE	UZ-3.0BS	
D729	8-719-987-63	DIODE	1N4148M	
D900	8-719-302-38	DIODE	RBV-602-01	
D901	8-719-200-02	DIODE	10E2	
D902	8-719-200-02	DIODE	10E2	
D908	8-719-933-88	DIODE	HZS16-2L	
D909	8-719-933-88	DIODE	HZS16-2L	
		< IC >		
IC100	8-759-745-61	IC	NJM4560D-D	
IC300	8-759-634-50	IC	M5218AL	
IC700	8-759-082-11	IC	M50720-358SP	
IC800	8-759-111-68	IC	uPC1237HA	
		< JACK >		
J100	1-580-054-21	JACK, PIN 2P		
		< COIL >		
L100	1-410-979-11	INDUCTOR	220uH	(F419R:G)
L100	1-424-397-11	COIL, CHOKE	200uH	(F519R:G)
L101	1-424-397-11	COIL, CHOKE	200uH	(F519R:G)
L200	1-410-979-11	INDUCTOR	220uH	(F419R:G)
L200	1-424-397-11	COIL, CHOKE	200uH	(F519R:G)
L201	1-424-397-11	COIL, CHOKE	200uH	(F519R:G)
		< TRANSISTOR >		
Q100	8-729-354-52	TRANSISTOR	2SC2545-E	
Q101	8-729-354-52	TRANSISTOR	2SC2545-E	
Q200	8-729-354-52	TRANSISTOR	2SC2545-E	
Q201	8-729-354-52	TRANSISTOR	2SC2545-E	
Q500	8-729-620-17	TRANSISTOR	2SC2259-FG	
Q501	8-729-119-76	TRANSISTOR	2SA1175-HFE	
Q502	8-729-140-84	TRANSISTOR	2SC1841-PAFAEA	
Q503	8-729-224-62	TRANSISTOR	2SK246-GR	
Q504	8-729-140-82	TRANSISTOR	2SA988-PAFAEA	
Q505	8-729-803-76	TRANSISTOR	2SA1371-E	
Q506	8-729-142-01	TRANSISTOR	2SC1941-LK	
Q507	8-729-209-15	TRANSISTOR	2SD2012	
Q508	8-729-141-46	TRANSISTOR	2SC4431-LK	
Q509	8-729-141-37	TRANSISTOR	2SA1684-LK	
Q510	8-729-011-14	TRANSISTOR	2SC3855M-OPY	(F419R)
Q510	8-729-010-97	TRANSISTOR	2SC3856M-OPY	(F519R)
Q511	8-729-011-13	TRANSISTOR	2SA1491M-OPY	(F419R)
Q511	8-729-010-98	TRANSISTOR	2SA1492M-OPY	(F519R)
Q512	8-729-140-82	TRANSISTOR	2SA988-PAFAEA	
Q513	8-729-141-26	TRANSISTOR	2SC3622A-LK	
Q600	8-729-620-17	TRANSISTOR	2SC2259-FG	
Q601	8-729-119-76	TRANSISTOR	2SA1175-HFE	
Q602	8-729-140-84	TRANSISTOR	2SC1841-PAFAEA	
Q603	8-729-224-62	TRANSISTOR	2SK246-GR	
Q604	8-729-140-82	TRANSISTOR	2SA988-PAFAEA	
Q605	8-729-803-76	TRANSISTOR	2SA1371-E	
Q606	8-729-142-01	TRANSISTOR	2SC1941-LK	
Q607	8-729-209-15	TRANSISTOR	2SD2012	
Q608	8-729-141-46	TRANSISTOR	2SC4431-LK	
Q609	8-729-141-37	TRANSISTOR	2SA1684-LK	
Q610	8-729-011-14	TRANSISTOR	2SC3855M-OPY	(F419R)
Q610	8-729-010-97	TRANSISTOR	2SC3856M-OPY	(F519R)
Q611	8-729-011-13	TRANSISTOR	2SA1491M-OPY	(F419R)
Q611	8-729-010-98	TRANSISTOR	2SA1492M-OPY	(F519R)
Q612	8-729-140-82	TRANSISTOR	2SA988-PAFAEA	
Q613	8-729-141-26	TRANSISTOR	2SC3622A-LK	
Q708	8-729-900-63	TRANSISTOR	DTA124ES	
Q710	8-729-900-36	TRANSISTOR	DTC124ES	
Q712	8-729-900-63	TRANSISTOR	DTA124ES	
Q714	8-729-620-05	TRANSISTOR	2SC2603-EF	
Q715	8-729-900-63	TRANSISTOR	DTA124ES	
Q901	8-729-140-84	TRANSISTOR	2SC1841-PAFAEA	
Q902	8-729-140-82	TRANSISTOR	2SA988-PAFAEA	
		< RESISTOR >		
R100	1-247-700-11	CARBON	100 5%	1/4W(F519R)
R101	1-249-469-11	CARBON	100K 5%	1/4W
R102	1-247-706-11	CARBON	330 5%	1/4W
R103	1-249-469-11	CARBON	100K 5%	1/4W
R104	1-247-725-11	CARBON	10K 5%	1/4W

MAIN

Ref. No.	Part No.	Description			Remark
R105	1-247-710-11	CARBON	560	5%	1/4W
R106	1-247-702-11	CARBON	150	5%	1/4W
R107	1-247-710-11	CARBON	560	5%	1/4W
R108	1-247-716-11	CARBON	1.8K	5%	1/4W
R109	1-260-661-11	CARBON	6.8	5%	1/4W(F519R)
R110	1-247-700-11	CARBON	100	5%	1/4W
R111	1-246-545-00	CARBON	1.0M	5%	1/4W
R112	1-249-844-11	CARBON	56K	5%	1/2W
R113	1-249-689-11	CARBON	4.7K	5%	1/2W
R114	1-247-713-11	CARBON	1K	5%	1/4W
R150	1-259-436-11	CARBON	2.2K	5%	1/6W(F419R:G)
R150	1-259-428-11	CARBON	1K	5%	1/6W(F519R:G)
R151	1-259-428-11	CARBON	1K	5%	1/6W(F519R:G)
R200	1-247-700-11	CARBON	100	5%	1/4W(F519R)
R201	1-249-469-11	CARBON	100K	5%	1/4W
R202	1-247-706-11	CARBON	330	5%	1/4W
R203	1-249-469-11	CARBON	100K	5%	1/4W
R204	1-247-725-11	CARBON	10K	5%	1/4W
R205	1-247-710-11	CARBON	560	5%	1/4W
R206	1-247-702-11	CARBON	150	5%	1/4W
R207	1-247-710-11	CARBON	560	5%	1/4W
R209	1-260-661-11	CARBON	6.8	5%	1/4W(F519R)
R210	1-247-700-11	CARBON	100	5%	1/4W
R211	1-246-545-00	CARBON	1.0M	5%	1/4W
R212	1-249-844-11	CARBON	56K	5%	1/2W
R213	1-249-689-11	CARBON	4.7K	5%	1/2W
R214	1-247-713-11	CARBON	1K	5%	1/4W
R250	1-259-436-11	CARBON	2.2K	5%	1/6W(F419R:G)
R250	1-259-428-11	CARBON	1K	5%	1/6W(F519R:G)
R251	1-259-428-11	CARBON	1K	5%	1/6W(F519R:G)
R300	1-249-469-11	CARBON	100K	5%	1/4W
R301	1-247-713-11	CARBON	1K	5%	1/4W
R302	1-247-713-11	CARBON	1K	5%	1/4W
R303	1-247-719-11	CARBON	3.3K	5%	1/4W
R304	1-247-704-11	CARBON	220	5%	1/4W
R311	1-246-545-00	CARBON	1.0M	5%	1/4W(F519R)
R400	1-249-469-11	CARBON	100K	5%	1/4W
R401	1-247-713-11	CARBON	1K	5%	1/4W
R402	1-247-713-11	CARBON	1K	5%	1/4W
R403	1-247-719-11	CARBON	3.3K	5%	1/4W
R404	1-247-704-11	CARBON	220	5%	1/4W
R411	1-246-545-00	CARBON	1.0M	5%	1/4W(F519R)
R500	1-247-713-11	CARBON	1K	5%	1/4W
R501	1-249-469-11	CARBON	100K	5%	1/4W
R502	1-247-704-11	CARBON	220	5%	1/4W
R503	1-247-717-11	CARBON	2.2K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R504	1-247-704-11	CARBON	220	5%	1/4W
			(F419R:AEP1, G/F519R:AEP1, G)		
⚠R504	1-212-889-00	FUSIBLE	220	5%	1/4W F
			(F419R:AEP2/F519R:AEP2)		
R505	1-247-704-11	CARBON	220	5%	1/4W
			(F419R:AEP1, G/F519R:AEP1, G)		
⚠R505	1-212-889-00	FUSIBLE	220	5%	1/4W F
			(F419R:AEP2/F519R:AEP2)		
R506	1-247-704-11	CARBON	220	5%	1/4W
R507	1-249-490-11	CARBON	27K	5%	1/2W
R508	1-247-721-11	CARBON	4.7K	5%	1/4W
R509	1-249-516-11	CARBON	33	5%	1/4W
			(F419R:AEP1, G/F519R:AEP1, G)		
⚠R509	1-212-869-00	FUSIBLE	33	5%	1/4W F
			(F419R:AEP2/F519R:AEP2)		
R510	1-249-524-11	CARBON	68	5%	1/4W
			(F419R:AEP1, G/F519R:AEP1, G)		
⚠R510	1-212-877-11	FUSIBLE	68	5%	1/4W F
			(F419R:AEP2/F519R:AEP2)		
R511	1-247-713-11	CARBON	1K	5%	1/4W
R512	1-249-561-11	CARBON	2.4K	5%	1/4W
R513	1-247-710-11	CARBON	560	5%	1/4W
⚠R514	1-212-857-00	FUSIBLE	10	5%	1/4W F
⚠R515	1-212-857-00	FUSIBLE	10	5%	1/4W F
R516	1-249-469-11	CARBON	100K	5%	1/4W
⚠R517	1-212-994-00	FUSIBLE	330	5%	1/2W F
⚠R518	1-212-849-00	FUSIBLE	4.7	5%	1/4W F
⚠R519	1-212-849-00	FUSIBLE	4.7	5%	1/4W F
R520	1-217-611-00	METAL PLATE	0.1		
R521	1-217-611-00	METAL PLATE	0.1		
R522	1-249-421-11	CARBON	2.2K	5%	1/4W
R523	1-249-431-11	CARBON	15K	5%	1/4W
R525	1-247-887-00	CARBON	220K	5%	1/4W
R529	1-247-846-11	CARBON	4.3K	5%	1/4W
R530	1-247-713-11	CARBON	1K	5%	1/4W
R531	1-247-887-00	CARBON	220K	5%	1/4W
R600	1-247-713-11	CARBON	1K	5%	1/4W
R601	1-249-469-11	CARBON	100K	5%	1/4W
R602	1-247-704-11	CARBON	220	5%	1/4W
R603	1-247-717-11	CARBON	2.2K	5%	1/4W
R604	1-247-704-11	CARBON	220	5%	1/4W
			(F419R:AEP1, G/F519R:AEP1, G)		
⚠R604	1-212-889-00	FUSIBLE	220	5%	1/4W F
			(F419R:AEP2/F519R:AEP2)		
R605	1-247-704-11	CARBON	220	5%	1/4W
			(F419R:AEP1, G/F519R:AEP1, G)		
⚠R605	1-212-889-00	FUSIBLE	220	5%	1/4W F
			(F419R:AEP2/F519R:AEP2)		

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

MAIN

Ref. No.	Part No.	Description				Remark
R606	1-247-704-11	CARBON	220	5%	1/4W	
R607	1-249-490-11	CARBON	27K	5%	1/2W	
R608	1-247-721-11	CARBON	4.7K	5%	1/4W	
R609	1-249-516-11	CARBON	33	5%	1/4W	(F419R:AEP1, G/F519R:AEP1, G)
⚠R609	1-212-869-00	FUSIBLE	33	5%	1/4W	F (F419R:AEP2/F519R:AEP2)
R610	1-249-524-11	CARBON	68	5%	1/4W	(F419R:AEP1, G/F519R:AEP1, G)
⚠R610	1-212-877-11	FUSIBLE	68	5%	1/4W	F (F419R:AEP2/F519R:AEP2)
R611	1-247-713-11	CARBON	1K	5%	1/4W	
R612	1-249-561-11	CARBON	2.4K	5%	1/4W	
R613	1-247-710-11	CARBON	560	5%	1/4W	
⚠R614	1-212-857-00	FUSIBLE	10	5%	1/4W	F
⚠R615	1-212-857-00	FUSIBLE	10	5%	1/4W	F
R616	1-249-469-11	CARBON	100K	5%	1/4W	
⚠R617	1-212-994-00	FUSIBLE	330	5%	1/2W	F
⚠R618	1-212-849-00	FUSIBLE	4.7	5%	1/4W	F
⚠R619	1-212-849-00	FUSIBLE	4.7	5%	1/4W	F
R620	1-217-611-00	METAL PLATE	0.1			
R621	1-217-611-00	METAL PLATE	0.1			
R622	1-249-421-11	CARBON	2.2K	5%	1/4W	
R623	1-249-431-11	CARBON	15K	5%	1/4W	
R625	1-247-887-00	CARBON	220K	5%	1/4W	
R629	1-247-846-11	CARBON	4.3K	5%	1/4W	
R630	1-247-713-11	CARBON	1K	5%	1/4W	
R631	1-247-887-00	CARBON	220K	5%	1/4W	
R700	1-249-433-11	CARBON	22K	5%	1/4W	
R701	1-249-433-11	CARBON	22K	5%	1/4W	
R702	1-249-433-11	CARBON	22K	5%	1/4W	
R703	1-249-427-11	CARBON	6.8K	5%	1/4W	
R704	1-249-427-11	CARBON	6.8K	5%	1/4W	
R705	1-249-433-11	CARBON	22K	5%	1/4W	
R706	1-249-433-11	CARBON	22K	5%	1/4W	
R707	1-249-433-11	CARBON	22K	5%	1/4W	
R708	1-249-433-11	CARBON	22K	5%	1/4W	
R709	1-249-433-11	CARBON	22K	5%	1/4W	
R710	1-249-433-11	CARBON	22K	5%	1/4W	
R711	1-249-441-11	CARBON	100K	5%	1/4W	
R713	1-249-433-11	CARBON	22K	5%	1/4W	
R714	1-249-433-11	CARBON	22K	5%	1/4W	
R715	1-249-433-11	CARBON	22K	5%	1/4W	
R716	1-249-433-11	CARBON	22K	5%	1/4W	
R722	1-247-757-11	CARBON	2.7K	5%	1/2W	
R746	1-249-433-11	CARBON	22K	5%	1/4W	
R747	1-249-433-11	CARBON	22K	5%	1/4W	
R748	1-249-433-11	CARBON	22K	5%	1/4W	
R749	1-247-903-00	CARBON	1M	5%	1/4W	
R750	1-249-429-11	CARBON	10K	5%	1/4W	
R751	1-249-430-11	CARBON	12K	5%	1/4W	
R752	1-249-417-11	CARBON	1K	5%	1/4W	
R753	1-249-433-11	CARBON	22K	5%	1/4W	
R760	1-249-405-11	CARBON	100	5%	1/4W	
R761	1-249-433-11	CARBON	22K	5%	1/4W	
R800	1-249-429-11	CARBON	10K	5%	1/4W	
R801	1-247-887-00	CARBON	220K	5%	1/4W	
R802	1-247-881-00	CARBON	120K	5%	1/4W	
R803	1-249-432-11	CARBON	18K	5%	1/4W	
R900	1-247-754-11	CARBON	1.5K	5%	1/2W	(F419R)
R900	1-247-755-11	CARBON	1.8K	5%	1/2W	(F519R)
R901	1-247-754-11	CARBON	1.5K	5%	1/2W	(F419R)
R901	1-247-755-11	CARBON	1.8K	5%	1/2W	(F519R)
R902	1-247-754-11	CARBON	1.5K	5%	1/2W	(F419R)
R902	1-247-755-11	CARBON	1.8K	5%	1/2W	(F519R)
R903	1-247-754-11	CARBON	1.5K	5%	1/2W	(F419R)
R903	1-247-755-11	CARBON	1.8K	5%	1/2W	(F519R)
R904	1-247-754-11	CARBON	1.5K	5%	1/2W	(F419R)
R904	1-247-755-11	CARBON	1.8K	5%	1/2W	(F519R)
R905	1-247-754-11	CARBON	1.5K	5%	1/2W	(F419R)
R905	1-247-755-11	CARBON	1.8K	5%	1/2W	(F519R)
R906	1-247-754-11	CARBON	1.5K	5%	1/2W	(F419R)
R906	1-247-755-11	CARBON	1.8K	5%	1/2W	(F519R)
R907	1-247-754-11	CARBON	1.5K	5%	1/2W	(F419R)
R907	1-247-755-11	CARBON	1.8K	5%	1/2W	(F519R)
R909	1-247-722-11	CARBON	5.6K	5%	1/4W	
R910	1-247-722-11	CARBON	5.6K	5%	1/4W	

< VARIABLE RESISTOR >

RV500	1-237-455-11	RES, ADJ, CARBON 500 (DC BIAS L-CH)
RV600	1-237-455-11	RES, ADJ, CARBON 500 (DC BIAS R-CH)

< RELAY >

RY300	1-515-793-11	RELAY

< SWITCH >

S100	1-571-111-11	SWITCH, PUSH (1 KEY) (CARTRIDGE) (F519R)
S300	1-692-146-11	SWITCH, PUSH (1 KEY) (SUBSONIC) (F519R)

< THERMISTOR >

⚠TH900	1-806-882-11	THERMISTOR, POSITIVE 2.2 (F419R:AEP2/F519R:AEP2)
⚠TH901	1-806-882-11	THERMISTOR, POSITIVE 2.2 (F419R:AEP2/F519R:AEP2)

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

MAIN **OUTLET** **PRI** **SEC** **SP** **TONE**

Ref. No.	Part No.	Description	Remark
		< VIBRATOR >	
X700	1-567-254-11	VIBRATOR, CERAMIC	
**********			
*	1-644-623-11	OUTLET BOARD	
		**********	
		< OUTLET >	
⚠CNJ901	1-526-794-11	OUTLET, AC	
**********			
*	1-644-621-11	PRI BOARD	
		*********	
		< CAPACITOR >	
C508	1-136-163-00	FILM 0.068uF 5% 50V	
C509	1-136-163-00	FILM 0.068uF 5% 50V	
C608	1-136-163-00	FILM 0.068uF 5% 50V	
C609	1-136-163-00	FILM 0.068uF 5% 50V	
		< CONNECTOR >	
* CNJ801	1-691-175-11	CONNECTOR (BOARD TO BOARD) 5P	
CNJ901	1-561-115-00	SOCKET, CONNECTOR 6P	
CNJ902	1-561-115-00	SOCKET, CONNECTOR 6P	
* CNP903	1-564-241-00	PIN, CONNECTOR (B4P-VH) 4P	
		< DIODE >	
D801	8-719-987-63	DIODE 1N4148M	
D802	8-719-987-63	DIODE 1N4148M	
		< COIL >	
L500	1-428-133-11	COIL, AIR-CORE	
L600	1-428-133-11	COIL, AIR-CORE	
		< RESISTOR >	
R524	1-247-727-11	CARBON 10 5% 1/2W	
R526	1-247-727-11	CARBON 10 5% 1/2W	
R624	1-247-727-11	CARBON 10 5% 1/2W	
R626	1-247-727-11	CARBON 10 5% 1/2W	
		< RELAY >	
RY800	1-515-676-11	RELAY	
RY801	1-515-676-11	RELAY	
**********			

Ref. No.	Part No.	Description	Remark
*	1-644-627-11	SEC BOARD	
		*********	
*	1-690-880-31	LEAD (WITH CONNECTOR) (F419R:G/F519R:G)	
		< CAPACITOR >	
C950	1-164-094-11	CERAMIC 0.0068uF 10% 25V (F419R:G/F519R:G)	
C951	1-130-789-00	FILM 1uF 5% 100V	
		< RESISTOR >	
⚠R950	1-212-966-00	FUSIBLE 22 5% 1/2W F	
**********			
*	1-644-619-11	SP BOARD	
		********	
		< CAPACITOR >	
C551	1-136-161-00	FILM 0.047uF 5% 50V (F419R:G/F519R:G)	
C552	1-136-161-00	FILM 0.047uF 5% 50V (F419R:G/F519R:G)	
C553	1-136-153-00	FILM 0.01uF 5% 50V (F419R:G/F519R:G)	
C651	1-136-161-00	FILM 0.047uF 5% 50V (F419R:G/F519R:G)	
C652	1-136-161-00	FILM 0.047uF 5% 50V (F419R:G/F519R:G)	
C653	1-136-153-00	FILM 0.01uF 5% 50V (F419R:G/F519R:G)	
		< RESISTOR >	
R551	1-249-482-11	CARBON 4.7 5% 1/2W (F419R:G/F519R:G)	
R552	1-249-482-11	CARBON 4.7 5% 1/2W (F419R:G/F519R:G)	
R651	1-249-482-11	CARBON 4.7 5% 1/2W (F419R:G/F519R:G)	
R652	1-249-482-11	CARBON 4.7 5% 1/2W (F419R:G/F519R:G)	
		< TERMINAL >	
TM900	1-537-227-11	TERMINAL BOARD (SP) (F419R:AEP2/F519R:AEP2)	
TM900	1-537-228-11	TERMINAL BOARD (SP) (F419R:AEP1, G/F519R:AEP1, G)	
**********			
*	1-644-625-11	TONE BOARD	
		**********	
		< CAPACITOR >	
C304	1-136-155-00	FILM 0.015uF 5% 50V	
C305	1-136-161-00	FILM 0.047uF 5% 50V	
C306	1-136-169-00	FILM 0.22uF 5% 50V	
C307	1-136-175-00	FILM 0.68uF 5% 50V	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

TONE

Ref. No.	Part No.	Description			Remark
C404	1-136-155-00	FILM	0.015uF	5%	50V
C405	1-136-161-00	FILM	0.047uF	5%	50V
C406	1-136-169-00	FILM	0.22uF	5%	50V
C407	1-136-175-00	FILM	0.68uF	5%	50V
		< CONNECTOR >			
CNP300	1-695-240-11	PIN, CONNECTOR 8P			
		< RESISTOR >			
R305	1-259-421-11	CARBON	510	5%	1/4W
R306	1-246-545-00	CARBON	1.0M	5%	1/4W
R307	1-246-545-00	CARBON	1.0M	5%	1/4W
R308	1-247-703-11	CARBON	180	5%	1/4W
R309	1-247-718-11	CARBON	2.7K	5%	1/4W
R310	1-249-551-11	CARBON	910	5%	1/4W
R405	1-259-421-11	CARBON	510	5%	1/4W
R406	1-246-545-00	CARBON	1.0M	5%	1/4W
R407	1-246-545-00	CARBON	1.0M	5%	1/4W
R408	1-247-703-11	CARBON	180	5%	1/4W
R409	1-247-718-11	CARBON	2.7K	5%	1/4W
R410	1-249-551-11	CARBON	910	5%	1/4W
		< VARIABLE RESISTOR >			
RV301	1-241-974-11	RES, VAR, CARBON 10K (TREBLE)			
RV302	1-241-972-11	RES, VAR, CARBON 10K (BASS)			
RV303	1-241-973-11	RES, VAR, CARBON 100K/100K (BALANCE)			

****

MISCELLANEOUS

****

20	1-590-499-31	WIRE, FLAT TYPE (23 CORE)	
21	1-692-148-11	SWITCH, ROTARY SLIDE	
⚠109	1-575-651-11	CORD, POWER	
⚠T1	1-450-928-11	TRANSFORMER, POWER (F519R)	
⚠T1	1-450-929-11	TRANSFORMER, POWER (F419R:AEP1, Germany)	
⚠T1	1-450-930-12	TRANSFORMER, POWER (F419R:AEP2)	

****

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-693-131-11	REMOTE COMMANDER (RM-S311)	
	2-181-754-01	COVER, BATTERY	
	3-755-074-11	MANUAL, INSTRUCTION (ENGLISH/FRENCH/SPANISH/PORTUGUESE) (F419R:AEP/F519R:AEP)	
	3-755-074-41	MANUAL, INSTRUCTION (GERMAN/DUTCH/SWEDISH/ITALIAN)	
*	4-951-287-01	INDIVIDUAL CARTON (F419R)	
*	4-951-288-01	INDIVIDUAL CARTON (F519R)	
*	4-952-575-01	CUSHION	

****

HARDWARE LIST

****

#1	7-682-547-04	SCREW +BVTT 3X6 (S)	
#2	7-685-651-79	SCREW +BVTP 3X20 TYPE2 N-S	
#3	7-685-648-79	SCREW +BVTP 3X12 TYPE2	
#4	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#5	7-621-849-00	SCREW (BV/RING)	
#6	7-682-560-04	SCREW +BVTT 4X6 (S)	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

9-957-241-11

Sony Corporation
Audio Group

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